From:	SEEDS Joshua
To:	Henning, Alan
Subject:	ODF Compliance Audit
Date:	Wednesday, August 13, 2014 11:13:35 AM
Attachments:	Field Guide Final Revision May 31 2013.pdf

Joshua Seeds

Nonpoint Source Pollution Analyst

Drinking Water Protection Program

Oregon Department of Environmental Quality

811 SW 6th Ave.

Portland, OR 97204

Phone: 503-229-5081 Fax: 503-229-6037

Email: seeds.joshua@deq.state.or.us

ATTACHMENT 3

Oregon Department of Forestry
Private Forests Program

2012 -2013
Forest Practices Act Compliance Audit

FIELD GUIDE for CONTRACTORS

Final Revised Edition
May 31, 2013

Introduction

This Field Guide is provided to support efforts to collect data as described in the Statement of Work of **RFP # ODF – 2065 -12** issued by the Oregon Department of Forestry in December 2012.

The information herein is intended to supplement and support the Contractor's Work Plan as a reference and a basis for consistent application of standards for data collection, collation and transmittal to the contracting Agency.

Table of Contents

List of Figures and Tables

SECTION 1. BACKGROUND INFORMATION

The Oregon Legislature (2011 Legislative Session – Budget Note # 1) directed the Agency to audit rates of compliance with Forest Practices Act standards, and to include the private sector in the process. The 2012 -2013 Forest Practices Compliance Audit Contract has been developed in response to that guidance. The Contractor and the Agency will work together, in different ways, toward developing useful information in response to the Budget Note.

The Contractor will gather data to provide a factual basis with which ODF will assess statewide compliance rates of timber harvest activities with Oregon's FPA. The Contractor will collect data but will not evaluate rule compliance. This is the purview of ODF. The Contractor will report on specific site conditions and ODF will determine which rules apply to the conditions, and compare the measured conditions against pre-determined criteria for compliance.

According to the terms of the contract, a private contractor will gather data that will reflect conditions of roads, skid trails, landings, riparian areas, streambanks, and the margins of wetlands and lakes at the sample sites. Some units may not contain examples of all the FPA rules subject to the study.

ODF analysis of the data will be primarily in the context of rules within the Oregon Forest Practices Act.[1]

Sampling will be limited to harvest units that were harvested in 2010 and 2011.

Sampling will be distributed among the three (3) Administrative Areas of ODF: Northwest Oregon, Southern Oregon, and Eastern Oregon. See Figure 5 for map of Area boundaries.

Land ownership categories will include industrial forestland, non-industrial privately owned forestland, and other ownerships, including state, county, and city ownerships. No federal ownerships will be sampled.

The major resource concern for this Compliance Audit is delivery or potential delivery of sediment to Waters of the State.

The Contractor will submit field data to ODF in an electronic digital format.

The ODF will assess the accuracy and consistency of data collected by contractors to ensure the integrity of the expanded values derived from analysis of the data.

---

[1] FPA Divisions 629-625 (Forest Roads) and 629-630 (Harvesting). Also included: examination of select rules from Divisions 629-605 (Planning Forest Operations), 629-640 (Water Protection Rules), and 629-660 (Water Protection Rules: Specific Rules for Operations Near Waters of the State).

Table 1

Typical Data to be gathered at each Sample Unit			
Roads Data	**Waters of State Data**	**Stream Crossings Data**	**Quarries/ Landings Data**
Road Type – entire	Stream Classification	Stream Classification	GPS point
Road Type – section	GPS Points	GPS Point	Type of feature: Q or L ?
GPS point	Stream segment type	Road type	Hillsope at landing
Road Use	Stumps within 20' of Type F or D stream	Fill length	Quarry / Landing issues
Road hillslope	Skid trails within 35' Type F or D stream	Fill Angle	Location of waste at landing
Road width	Cable Corridor Status	Fill Depth	Type of waste at landing
Sidecast/Fill Angle	S/N stream gradient	Culvert inlet diameter	Landslide present at quarry or landing Y/N?
Sidecast/Fill on steep slopes	Vegetation condition within 10 feet of stream	Culver outlet diameter	Drainage of landing or quarry to streams?
Fill condition	Slash present in stream	Temporary Crossing condition	Photo I.D. of issues
Road cut condition	Slash cover stream, cause ponding	Drainage features above stream crossing	
Gullies present Y/N ?	Disturbance to stream channels	Distance to drainage features above crossing	
Culvert status	Skid trails in stream	Status of water bars	
Water flowing onto road?	Amount of Sediment delivered to stream	Road slope to crossing	
Water flowing onto Slope- issues, slope	Distance of road to stream	Sediment issues	
Connectivity to Waters of State	Photo I.D. of issues	Fill stability issues	
Sediment deliver to Streams? Amount ?		Photo I.D. of issues	
Photo I.D. of issues			

General Data to be gathered:
Notification # / Forester's Name /   Date / Stream Presence / Classification
Timber Harvest type / Stream crossings - present/absent /   Access Issues ? Skid trails used: Y/N
Road Construction:present/absent
General photos, notations, & observations

SECTION 2. PROJECT WORK PLAN

Access to study sites Contractors and ODF District and Unit

The ODF will obtain permission from landowners for the Contractor to access study sites.

ODF staff from District and Unit offices will contact landowners on behalf of the project.

A map of the locations of the offices, and contact information for each, is included in Figure 4 and Section 8.

The Agency Administrator will reference the Contractor's Project Work Plan to schedule and coordinate with local Stewardship Foresters to provide access to the sites for Contractors.

<u>**Contractor Site Visits**</u>

First -	Contractor should call the local Stewardship Forester to affirm that access to the sample sites has been obtained, and to get any pertinent local information.
At the site -	Contractors are encouraged to tread lightly and demonstrate due respect for private lands. If roads have been treated following logging and vehicle traffic is likely to impact road structure or surface, Contractor should defer to walking. If access problems arise, Contractor should contact the Agency Administrator or the local Stewardship Forester for assistance.
When you leave -	Notify the local Stewardship Forester, or the Agency Administrator, that the site visit has been completed, so the Agency may follow up with landowners as needed. Notification could be in person, via mail, email, text message or cell phone call.

SECTION 3. DEFINITIONS

The Oregon Forest Practices Act, and the forest industry at large, employ some unique nomenclature. The Forest Practices Act contains a collection of definitions.

For general definitions, see OAR 629-600-0100 (Oregon Forest Practices Act – Definitions).

Also, detailed consideration of the standards of practices for the Forest Practices Act rules are considered in Guidance Manuals for individual rule sections. The Guidance may be viewed on-line at the following website: http://www.oregon.gov/odf/privateforests/pages/fpaguidance.aspx

Some terminology will be unique to the Compliance Audit contract. A list of terms is provided here.

"Agency" is the Oregon Department of Forestry. Used interchangeably with "ODF".

"Agency Administrative Area" refers to portions of the area in which the ODF administers the Oregon Forest Practices Act. They are Eastern Oregon Area, Northwest Oregon Area, and Southern Oregon Area. A map of the areas is provided.

"Collector Road" is a principal haul route for > 500 acres (<20,000 acres).

"Contractor" is a person or organization selected by ODF and retained by contract # **RFP # ODF – 2065 -12** to do the work described in the Scope of Work.

"Delivery Schedule" is a list of dates by which various portions of the project should be completed. The delivery schedule is described in the Contractor's Project Work Plan.

"Gully" is an eroded portion of a road, fill, or ditch that is 2" wide and/or 2" deep with a defined edge. I.e., the edge of the gully is sharp (drops at least ¼" immediately from surrounding surface).

"Landing" is an area constructed for logging equipment and log handling operations. Landings may be at the end of roads, or constructed as wide spots in the road. They are typically wider than the rest of the logging road (ODF State Forests Program Roads Manual).

"Mainline" is a principal haul route for >5000 acres. Mainlines have outlets onto a state or county public road. *Also a cable yarding term for the primary line on a yarder: carriage runs on mainline.*

"Sidecast" is soil & rock that has been pushed out of a slope to the edge of a road or skid trail surface. Less than 40% of volume is slash.

"Skid trail" is a track that has been bladed, excavated by logs, or has been traversed multiple times.

"Slash pile" is a mass of woody debris that is ≥ 60% woody material (not soil/rock). Slash piles are created by being pushed together or dropped by machinery, or in some instances by hand.

"Slump" is defined as "Downward intermittent movement of rock debris, usually the consequence of removal of buttressing earth at the foot of a slope of unconsolidated material. It commonly involves a shear plane on which a back-tilting of the slumped mass occurs" (Brittanica.com). For purposes of this project, slumps exceeding one cubic yard in volume are recorded.

"Spur Road" is the most outer component of a road system; they dead-end, typically at a landing, and lead to collectors and/or mainlines.

"Temporary Crossing" is a bridge, ford, or temporary structure installed across a stream or watercourse for short-term use by logging equipment, construction vehicles or other machinery. The purpose of a temporary crossing is to provide a means for harvest-related vehicles to cross streams or watercourses without moving sediment into streams, damaging the streambed or channel, or causing flooding.

"ODF" is the Oregon Department of Forestry.

"**ODF Area**" means one of three Administrative Areas where the Oregon Department of Forestry administers the Oregon Forest Practices Act. A map of the Areas is included in Attachment 1.

"River Left" is the left bank of a stream facing downstream

"River Right" is the right bank of a stream facing downstream

 "Rill" is surface runoff concentrated in numerous small (< 2" width) downslope channels that are uniformly spread apart.

"Road" is a conveyance over which log truck traffic is to pass. The road width is measured from the edge leading down to a ditch (or the exterior disturbed area if no ditch present) to the other edge. Includes siding of pit-run & running surface. May be unsurfaced or surfaced.

- **New**: Built to accommodate the sampled Units harvest.
- Reconstructed: Refurbished pre-existing road, work done to accommodate the sampled Units harvest.
- Pre-exist**ing:** All other road types including decommissioned roads.

"Road Fill" is material placed to support a road.

"**State**" means the State of Oregon.

Unit – A geographic area indicated in a Notification of Operations to State Forester ("Notification"). Units will vary in size and complexity.

For the purpose of the 2012-2013 Audit individual unit boundaries will define the work area for contractors, and the Contractor will be paid on a per-unit basis. Contractors will measure and assess conditions on the ground that were created by timber harvesting activity.

The format for Notification of Operations is a combination of year (4 digits) - ODF office (3 digits) – operation number (5 digits) and unit number (one digit). This would appear as: 2011511000431 for 2011, office 511, operation 00043, and unit 1.

Unit Data – Unit Data is the collection of information Contractors will gather at each unit through measurement and visual estimation.

Unit Data Topics – Unit Data Topics classify Unit Data. There are five (5) Unit Data Topics:
- General Data
- Waters of the State
- Roads
- Stream Crossings
- Landings and Quarries

Not all Units will contain examples of all Unit Data Topics; all units will contain General Data.

Unit Data Values – Unit Data Values are the currency of information collected by Contractors. A Unit Data Value represents one measurement or observation. Unit Data Values are either discrete (yes/ no, present/absent) or continuous (length/slope/depth/width).

Unit Data Standards – The Unit Data Standards describe the required accuracy and precision necessary for the Unit Data

Unit Data Package – A collection of data of **10** units submitted to ODF for review.

Unit Data Package Receipt Date – The date on which ODF receives Unit Data Package from Contractor.

Unit Data Quality Review – Process in which data from Unit Data Packages will to sampled to determine if the Contract standards for precision and accuracy have been met by the contractor.

Unit Data Quality Review Interval - The period of time between the receipt of a Unit Payment Package by ODF and the determination of the conditions of Acceptance for Payment.

Unit Payment Package - A collection of data from **20** units that have been accepted for payment by ODF. The final Unit Payment Package will contain data from fewer than 20 units. The contractor will submit the Unit Payment Packages with an invoice for payment.

Unit Payment Package Receipt Date – The date on which ODF receives Unit Payment Package from Contractor

Acceptance for Payment indicates the **Unit Data Quality Review** has been applied to a Unit Data Package and the contents of the Package meet the Unit Data Standards. Upon **Acceptance for Payment**, ODF Agency Administrator will submit invoice to ODF Fiscal Services within 3 business days. Payment to contractor must be completed within 45 days of receipt of invoice by Fiscal Services.

Agency Contract Administrator: An employee of ODF will be designated as Contract Administrator to represent the Agency in matters regarding the Contract, work to be done, to periodically inspect the work for conformance with specifications, and to certify work as acceptable for payment.

Contract Supervisor - The person or persons who direct the activities described in the Scope of Work on behalf of the Contractor. The Contract Supervisor must have authority to act on behalf of the Contractor.

Contract Field Foresters - The person or persons actively engaged in gathering data on the subject units. The Contractor, Contract Supervisor and Field Foresters may or may not be the same person.

Landowner - The owner of the land where the Units to be sampled are situated. The Landowner may or may not have conducted the timber harvesting operation that created the conditions that are the subject of the audit. Written Landowner permission is required before data gathering on a particular unit may commence.

ODF Stewardship Forester - ODF Stewardship Foresters administer the Forest Practices Act throughout the state, from the various District and/or Unit offices of the Department of Forestry. Stewardship Foresters will contact landowners to arrange for access for contractors, and can be a source of useful local information.

Pending Payment Period - The interval between the Acceptance for Payment and the issuance of payment to Contractor. This period is not to exceed 45 days.

SECTION 4. FIELD PROCEDURES

Observed data submitted to agency by Contractor must meet specified minimum standards for measurements of presence/absence, length, width, depth, slope, culvert diameter, classification of drainage features, types of road use, hydrologic connectivity, volume and other general data.

Unit Data Topics – Unit Data Topics classify Unit Data. There are five (5) Unit Data Topics:

- General Data
- Waters of the State
- Roads
- Stream Crossings
- Landings and Quarries

Not all Units will contain examples of all Unit Data Topics; all units will contain General Data.

- Contractor will deliver data from individual harvest units in digital form to Agency in a manner described in the approved Project Communications Plan in groups of ten (10) units that will comprise a Unit Data Package.
- Inspection and Certification: Before certifying work as acceptable, Agency will sample work for compliance with contract specifications on a minimum of 10% of the sample units, portions of units or more entire units to ensure contract specifications are met.
- Agency will inspect the data in a Unit Data Package according to the Unit Data Quality Review.
- Agency will notify Contractor when inspections are to be made so that Contractor may observe inspection work, if desired.
- Agency will make every attempt to perform all inspections in a timely manner in order to support Contractor's work and payment schedule. However, during certain periods of the field season, availability of Agency personnel may be affected due to emergency situations such as forest fires. This could cause a delay in timely contract administration (unit inspection) that may result in a delay or impact the Contractor. Contractor agrees to release ODF from any liability arising out of delays due to circumstances beyond ODF's control including, without limitation, any delays due to forest fire emergencies.

Section 4.1. Description of Data Collection

The following four data types (waters of state, road, stream crossings, quarries & landings) each have their own associated protocol. For each data type we provide information on data collection, variable definitions and units, and database fields for inclusion. We recommend that each data type include as a final entry a notes section. This section will normally be empty, but may contain pertinent information for a given observation.

4.1.A. General Data Collection

Photo documentation

Contractors shall take photographs to document at each unit the unit appearance and conditions. Each photograph should clearly display the condition intended to be conveyed. Contractor shall include notes describing why the photograph was taken, along with any other information that might aid with interpretation. Photographs should include a scale reference, such as a stadia rod, person, hardhat, etc. Depending upon conditions at the site, Contractor will photograph the following:

1. General unit photo. A minimum of one photograph shall be taken on each unit to document overall location and topography of the unit. The type of operation (clearcut, thin) should be readily apparent in each picture.
2. Sediment delivery to streams. Take photographs any time that sediment appears to be delivered from an operational activity to a stream. Examples include (but are not limited to) delivery from an eroding road, unstable road fill, or a quarry in the stream. If possible, take a photograph that shows both sediment source and delivery site. If this is not possible, show source and delivery in separate photographs and clearly record sufficient information to indicate that both photographs are of the same incident.
3. Waste delivery to streams. Take photographs any time other types of operational waste are reaching a stream. Guidelines for photograph content are similar to those for sediment delivery.
4. Petroleum products waste. Photographs should be taken irrespective of delivery to stream.
5. Equipment tracks in streams and wetlands. Photographs should display the tracks, together with enough of the surrounding area to provide evidence that the tracks are in a stream or wetland.
6. Stream diversion down ditches. Photographs should show enough of the contributing stream and the ditch to establish that diversion is taking place.
7. Quarries in stream boundaries. These will likely be rare. If present, the photograph should be of sufficient scale to show that the quarry is indeed within stream boundaries.

Other General Unit Data

For each unit visited, the contractor will be responsible for collecting unit-level data that provide a context for the other data types. These data include recording:
1. Whether road construction or reconstruction took place within the unit (yes/no).
2. Whether skid trails were used or constructed within the unit (yes/no).
3. The number of stream crossings present within the unit.
4. The types of Waters of State present in the unit (see Waters of State; WOSType).
5. The timber harvest type (clearcut, thin).
6. Access issues (necessary keys, contacts, best routes for entry to the unit, dogs, impassable obstacles, roads blocked by fallen trees, etc.) such that the Unit Data Quality Review process may efficiently access units after they have been surveyed by the Contractor.

4.1.B. Waters of State Data Collection

Data Collection Procedure:

To sample Water of State (WOS; see definition), data are collected on foot. All streams, lakes, and wetlands within the harvest Unit are sampled. Waters of State data are collected along wetlands, lakes, and either side of streams with RMAs (see Table 1 in the FPA). For streams with an RMA the data collector(s) walk along the riparian boundaries. Record a single data point for wetlands and lakes. For streams that are other than small non-fish streams, data are recorded in 200' intervals starting at the edge of the harvest unit. If a stream associated wetland is encountered, record data for the stream and data for the wetland.

The Contractor shall verify harvest occurred within 100' of the stream channel for type F or D streams, search for stumps harvested < 20' from the edge of the channel, skid trails within 35' of a channel, and damage associated with cable corridors.

While traveling along the edge of the RMA, data collectors will search for slash in the stream, disturbances to the channel (from sidecast, vehicle activity, etc.), and – perhaps most importantly – incoming gullies or channels that appear to deliver sediment to the stream in question or deposit material close enough to the stream that delivery to the stream is suspected (within 10' of the bankfull width). Data collectors travel along both banks of an RMA if present (single side if the other side is not in the unit).

For cable yarding units with RMAs, we strongly recommend that the Contractor travel to all landings where towers were located. From this vantage point any yarding corridors across the RMA should be most visible and easier to count and note. Data are collected either continuously or discretely. For instance, data collection within a section of an RMA-buffered stream will include a tally of stumps within 20' of a channel. Discrete data collection events are conditions encountered that truncate the sampled section. For WOS data collection the conditions that trigger the truncation of a data-collection section include encountering:

- A skid trail within 35' of an F or D stream
- A cable corridor through an RMA
- A slash pile near WOS
- Disturbance to WOS such as machine tracks through a wetland (see WosDisturb below)
- Delivery of sediment from a skid trail
- A road, skid trail, or temporary crossing
- A stream junction or termination point

Waters of the State are defined in various sections of the FPA. The initial reference is in OAR 629-600-0100 (83)(see Appendix A). A portion of the FPA that covers virtually all of the variants is OAR 629-635-0200. We break out size and type categories in the Waters of State Definitions Table (below). Streams are classified by size as Large, Medium, and Small (L, M, S). They are also classified as Domestic Use, Fish-bearing, and Non-fish bearing (D, F, N). These abbreviations are often combined, size first. A large fish-bearing stream may be referred to as LF. Lakes, for the purpose of this project, are recorded as large or small if they are fish-bearing (LFL, SFL for large & small [> or < 0.5 acres] fish lake), and simply as NL (non-fish bearing lake) if they are > ½ acres. Wetlands are considered under different rule conditions if they are <1/4 acres, > ¼ acres but < 8 acres, or > 8 acres (respectively W<1/4, W1/4 & SWL for Significant Wetland). If

they are < 8 acres and part of a stream course and adjacent to a stream, they are considered stream associated wetlands (SAW), which are to be treated as the stream they are associated with. Seeps or springs should be considered wetlands according to their size (SWL, W1/4, W<1/4).   See definitions for (stream) channel and wetland.

Table 2 – Waters of State Definitions

	Abbrev.	Definition	Citation
Water Classifications			629-635-0200
Stream Types			629-600-0100(68)
Fish	F	Fish use	629-600-0100(22), 629-600-0100(77)
Non-fish	N	No fish use	629-600-0100(78)
Domestic	D	Domestic use	629-600-0100(17), 629-600-0100(76)
Stream Sizes			
Large	L	average annual flow > 10 cubic feet/second	629-635-0200(14)(c)
Medium	M	average annual flow > 2, < 10 cubic f/s	629-635-0200(14)(b)
Small	S	average annual flow < 2 cubic feet/second	629-635-0200(14)(a)
Lakes - Types & Sizes			629-600-0100(36)
Large with fish	LFL	> 8 acres, fish use	629-600-0100(38)
Small with fish	SFL	< 0.5 acres, fish use	see guidance for 629-630-0600(3)(b)
Non-fish	NFL	> 0.5 acres, no fish use	see guidance for 629-630-0600(3)(b)
All lakes	AL	> 0.5 acres	
Wetlands			
Significant wetlands	SWL	Wetland > 8 acres	629-600-0100(64), 629-635-0200(16)(a)
Wetland>1/4 acres	W1/4	Wetland > 1/4 acre, < 8 acres	629-635-0200(16)(c)
Wetland<1/4 acres	W<1/4	Wetland < 1/4 acre	629-635-0200(16)(c)
Stream Assoc. Wetland	SAW	Wetland at stream margin < 8 acres	629-635-0200(16)(b)

Data collection for small non-fish (SN) streams differs from other stream types in that the stream section length may be greater than 200'. This is to facilitate data collection along the common SN stream type and to collect slash data in a manner that is consistent with rule language. For small non-fish (SN) streams the Contractor shall collect data while travelling upstream or downstream along the channel. For SN streams begin data recording at their junction with another stream, at the stream initiation point, or at the downstream portion of the stream where it leaves the Unit boundaries. Record the starting point for the SN section and travel along the stream channel until the slope of the stream either becomes greater than 10% or becomes less than 10% for a distance of > 30'. Mark the starting point by noting the point i.d. on a piece of plastic flagging secured at the point at which the GPS coordinates are taken. The point of change represents the end of the previous sampling section and the beginning of the next sampling section. This procedure will produce variable-length stream sections for the purpose of estimating slash cover on the lower gradient portions of the streams. If a stream section is > 100' in length and an incident is discovered (i.e., the conditions listed above), begin a new stream WOS section and record the incident in the new section.

Figure 1- Stream Sampling Layout
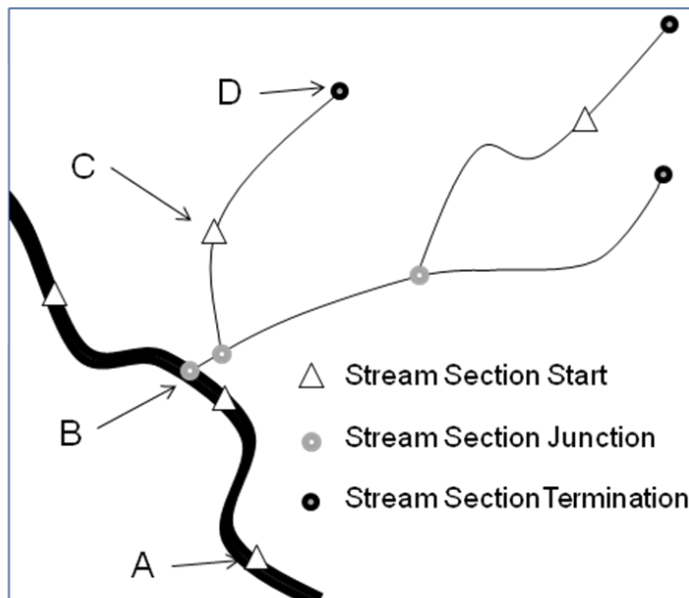
The start-points of all sections shall be given a unique (within the Unit) GPS location name. A default name provided by the GPS unit is sufficient so long as it is correctly recorded along with the appropriate data and is unique within the unit. Contractor shall record whether the stream GPS points represent a section start, junction, or termination point. The figure above may be used to describe how this process would work. Point A is a starting point for a stream section along an RMA of, say, a fish-bearing stream. It is 100' from the edge of the unit. Other start sections along the RMA are spaced evenly at 200' intervals. The data collectors travelled from A towards B. At B they create another stream section start point before they reach 200' but ensure it is labeled as a junction. Data collection continues along the RMA at 200' intervals. The crew returns to travel up the small N stream starting at the junction B. They create a new data entry at the junction to capture the gradient category of the small N stream. They soon reach another junction and sample up that Small N stream towards C. The gradient remained <10% from the junction until they reached a change in gradient, point C. Point C serves as a start point along the N stream. They collect data along the stream until reaching its terminus at D. Because they are recording data for a terminal point, they ensure that data collection for the section to that point is complete. Aside from recording the GPS location of the point, stream type, and the point type (terminal), the crew does not record other data at D. They then travel back to the last junction and continue data collection up the N stream.

While traveling along a section of stream, record all sediment connectivity (channels or gullies delivering sediment to the channel), channel disturbances (e.g., tracks for machinery), metallic waste from the most recent logging operation, slash-caused stream pooling, or bank erosion from slash placement. Record the amount of slash over the channel if the gradient <10%.

Data are listed below that need to be recorded and reported for each section of WOS data. They are to be compiled according to the specifications listed in the table WOS Segment Data:

DataType: This variable is recorded for all WOS data.

Variable Name	**DataType**
Value(s)	"WOS"
Level	Unit

Notification: Provide the Agency notification number for all data collected within a specific harvest unit.

Variable Name	**Notification**
Value(s)	Text
Record for	Unit

Surveyors: Record the name or names of surveyors conducting the data collection on the unit in use.

Variable Name	**Surveyors**
Value(s)	Text
Record for	Unit

Date: Record the date of data collection. Record in the format of "MM/DD/YYYY".

Variable Name	**Date**
Value(s)	MM/DD/YYYY
Record for	Unit

Side: Record the side of the stream RMA data collection is occurring on. Values are "RR" and "RL" for "River Right" and "River Left". River right is the right bank facing downstream. This is recorded only when data are being collected from along the edge of an RMA. Otherwise it is omitted.

Variable Name	**Side**
Value(s)	"RR", "RL"
Record for	WOS Section
Condition	Type F/D (all sizes) and L/M type N streams

SegGPS: A GPS point is recorded at the beginning of each WOS segment. The point name is associated with the data collected for that WOS section. Hang flagging with the GPS point noted on it with marking pen.

Variable Name	**SegGPS**
Value(s)	Text
Record for	WOS Section

Record: The individual record number (starting at 1) begins here. If there are multiple entries to be made for a WOS section, each entry has a subsequent Record number.

Variable Name	**Record**
Value(s)	Numeric
Record for	WOS Section

SegType: Record whether the GPS point is a start point ("S"), a junction ("J"), or a terminal point ("T"). Terminal points are assigned if a stream ceases to be a stream (lack of bank and/or lack of sorted material) or if a stream passes out of a unit.

Variable Name	**SegType**
Value(s)	"S", "J", "T"
Record for	WOS Section

WOSType: Record type of Waters of State. Record for each WOS section. See above description for types. "AL" stands for "All Lakes". For this audit procedure, "AL" suffices in place of "NFL" and "LFL". Any of these 3 options may be used. Of particular note, if you encounter a "SAW" less than 8 acres, the wetland is to be considered a portion of the stream. Therefore, data recorded for the wetland would be coded according to the corresponding stream type (e.g., "LF" or "SN"). If the wetland were > 8 acres, then it would be considered a significant wetland "SWL". Therefore, "SAW" does not exist as a recorded data type.

Variable Name	**WOSType**
Value(s)	"LF", "MF", "SF", "LN", "MN", "SN", "LD", "MD", "SD", "LFL" " SFL", "NFL", "AL", "W1/4", "W<1/4", "SWL"
Record for	WOS Section

Stumps20: Tally all stumps within 20' of the bankfull width for all streams except SN. If stumps lie within a cable corridor or the felled tree is present, tally under Stumps20_Other.

Variable Name	**Stumps20**
Value(s)	Numeric (tally)
Record for	WOS Section
Condition	All streams but SN

Stumps20_other: Tally of stumps within 20' of the bankfull width of all streams but SN. Use this value for stumps created in conjunction with road construction, skid trail construction, or site preparation, not in the apparent course of timber felling within the unit.

Variable Name	**Stumps20_other**
Value(s)	Numeric (tally)
Record for	WOS Section
Condition	All streams but SN, in cable corridor or felled tree

	remains

Skid35: Within a WOS section, record the closest distance a skid trail approaches the bankfull width of a D or F stream. Record if ≤ 35' between edge of skid trail and stream bankfull width. If a skid trail lies within 35' and delivers to a stream, it would be reported in the column Skid35 (distance to stream if < 35') and in SkidIssues as SOTH.

Variable Name	**Skid35**
Value(s)	Closest approach of skid trail
Record for	WOS Section
Condition	F, D streams. Record for all skid trails within 35' of bankfull width
Units	Feet

CableCorridor: Within a WOS section, record (if present) whether a cable corridor caused soil disturbance within 20' of a stream's bankfull width (CYS), a cable corridor is present but no soil damage is evident (P), or if damage is present but apparent repairs have taken place (DR; mulching, seeding, or other stabilization activities).

Variable Name	**Cable Corridor**
Value(s)	"CYS", "P", "DR"
Record for	WOS Section
Condition	Record if cable corridor through RMA is present. All streams except SN.

SN_Grad: Record at the beginning of a SN WOS section where a gradient change occurs (see text above) for an upstream distance of > 30'. Record whether the gradient changes to <10% or ≥10% (absolute value – not a change from [e.g.] 30% to 20%).

Variable Name	**SN_Grad**
Value(s)	"< 10%", "≥ 10%"
Record for	WOS Section
Condition	SN

Veg10: Determine if all < 6" conifers & vegetation retained within 10' of SN perennial bankfull width. Record for all perennial SN streams except those in Coast Range and Western Cascades (for map see Figure 1 in FPA; a GIS version of the map will be provided to Contractor). Record for damage beyond minor disturbance required for extracting trees (e.g., harvester tracks along channel edge). Obtain perennial status from information supplied by Stewardship Forester. Does not apply to cable corridors or stream crossings.

Variable Name	**Veg10**
Value(s)	"Y", "N"
Record for	WOS Section

	Perennial SN in regions specified in FPA Table 5 (Page 51); regions in Figure 1 (Page 48). Does not
Condition	apply to cable corridors or crossings.

SlashCover: Estimate the percentage of the SN WOS section (<10% gradient only) that was covered with slash.

Variable Name	**SlashCover**
Value(s)	Continuous
Record for	WOS Section
Condition	SN channel < 10% gradient
Units	Percentage (5% increments)

WosDisturb: This is a column that covers a substantial number of conditions. Be aware that not all conditions apply to all WOS. Streams may receive values that other WOS types do not. Values:

SPI: Slash pile within a channel, wetland, or lake. If the slash pile is outside of a channel's bankfull width, see SP10.
SP10: Slash within 10' of a channel's bankfull width but not in the channel's bankfull width
SPO: Slash in a stream causes ponding of water, slash is left in ponded water, or slash left in a lake. SE: Slash erosion. The stream banks are eroding due to the flow of water around slash.
TR: Track or rut. Machinery has been operated into a lake or into the channel of a stream. Look for treadmarks (paired linear depressions) in the shore or channel.
SI: Sidecast. Dirt or rock that has been moved aside in the act of harvest or road building and has ended up in the WOS.
ST: Stumps. Tree stumps are present in WOS, stream bankfull width, lake high-water marks.
MW: Metallic Waste. Metallic waste (cables, treads) from *recent harvest activities* (not legacy) is detected within WOS or their high-water marks.
RR: Road rock. Road rock has entered WOS as a consequence of road building.
CR: Channelized or Relocated. A stream channel at a temporary crossing has been channelized, relocated, or diverted due to something other than road construction (e.g., log decking from a landing).
AR: Add or remove soil/rock. A stream channel has had soil or rock material added to it or had it taken away due to activities other than road construction (e.g., landing construction).

Variable Name	**WosDisturb**
Value(s)	"SPI", "SP10", "SPO", "SE", "TR", "SI", "ST", "MW", "RR", "CR", "AR"
Record for	WOS Section
Condition	Streams: CR, AR, SPO, SE Wetlands: see "All"

Lakes: see "All", SPO
All: MW, SI, ST, SPI, RR, TR, SP10

SkidIssues: Record connectivity issues for skid trails. If a skid trail is connected to the WOS , determine whether the skid trail is oriented straight up a steep (>60% or >40% for highly eroding soils) hillslope for a distance of >100 feet ("SUC"). If the skid trail is connected to WOS and steep (connectivity originated from slopes >60% or >40% for highly eroding soils) but not oriented directly up a hillslope, record "SSC". The final category is more general. If a skid trail does not meet the previous conditions but is still connected to a WOS, record "SOTH".

Variable Name	**SkidIssues**
Value(s)	"SUC", "SSC", "SOTH"
Record for	WOS Section
Condition	Skid trail connected to WOS

SkidSedVol: Record the estimated amount of delivery for any detected inputs of sediment into WOS that originated from skid trails. Values are in cubic yards and are recorded as 0-1, 1-10, 10-100 or > 100 cubic yards of sediment. If gully erosion has occurred leading to the WOS, use the gully shape to assist in estimating the delivered volume.

Variable Name	**SkidSedVol**
Value(s)	"0-1", "1-10", "10-100", ">100"
Record for	WOS Section
Condition	Skid trail connected to WOS

RoadDist: Record the distance as either <10', >10', or >50' from a road or crossing. Do not include skid trails in this measurement (but do include the distance to temporary crossings).

Variable Name	**RoadDist**
Value(s)	"<10' ", ">10' ", ">50' "
Record for	WOS Section
Condition	All WOS
Units	Feet

WrittenPlan: Record whether the following conditions are encountered: stumps and/or yarding corridors found within 100' of an F or D stream (WP100) or Significant Wetland. If found, please note in comments if the logs were removed. and yarding corridors through RMAs (WP Yard). Once one of these conditions is detected or measured, it does not need to be recorded again for any WOS section within that harvest Unit.

Variable Name	**WrittenPlan**
Value(s)	"WP100", "WP_Yard"
Record for	WOS Section

| Condition | WP100: F/D |
| | WP_Yard: no SN, Wetlands=SWL |

WOS_Photo: Record photographs of issues regarding WOS connectivity and vehicle tracks within wetlands, stream channels, or lake banks. See photograph requirements in section 1.A.

Variable Name	**WOS_Photo**
Value(s)	Text
Record for	WOS Section
Condition	WOS connectivity, vehicle tracks

4.1.C. Roads Data Collection

Data collection procedure:

Roads are defined as conveyances over which log trucks may pass. Road data collection begins at the location where a road enters a harvest unit or from a junction of one road from another. Road data collection takes place at some point after WOS data collection; other data types may be collected prior to the road data. As a recommendation, we suggest collecting information on roads, landings, quarries, and new crossings together. That is, as road data is collected the Contractor will encounter landings and new crossings. We encourage them to collect information on these other features as is most efficient.

Road data are collected in 200' sections. The distance between sections may be determined using pacing, laser rangefinder, stringbox, or accurate (<10' error) GPS unit that determines distance traveled. Data are collected at the startpoints of each section and between the startpoint and endpoint as encountered. Startpoints shall be individually recorded as GPS points, and those points given names unique within the Unit. GPS points should be identified with paint on the road surface or a piece of flagging with the point i.d. noted. The termination point will often be at a landing; truncate the road section length where data collection for the landing is appropriate.

Similar to WOS data collection, road data are collected at start points, junction points, and between points as conditions are encountered. Conditions that would trigger the starting point of a new road section include encountering:

- Any delivery of sediment to WOS

- Stream crossings, landings, and quarries

- Road junctions

For instance, in the following figure, the field crew started data collection at 001 and indicated that it is a road section start point. They collect data every 200' and reach start points 002 and 003. Point 004 is a road junction and came sooner than the 200'. The crew continued up the right fork and obtained data at 005 and then came to the end of the road and recorded a termination point at 006. The crew went back to 004, recorded that they were starting anther road section by recording 007 in the same location, traveled 200' to 008, and soon came to a stream crossing, recorded data on the crossing, and began a new road station. They finished data collection for the section between 009 and 010, recorded 010 as a termination point and did not record any more road data.

Figure 2 – Roads Sampling Layout
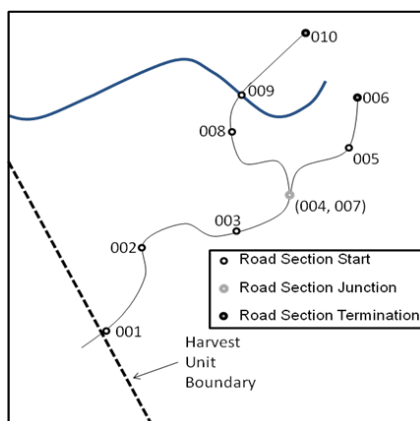
The FPA does not define different types of roads yet the guidance does indicate that rules apply differently (see Guidance for 629-625-310[4]). In this case, we have three road types and three conditions for those roads. The types are Spur, Collector, and Mainline. A Mainline is a principal haul route for >5000 acres. Mainlines have outlets onto a state or county public road. Collectors are principal haul routes for > 500 acres (<20,000 acres) and connect other roads. Spurs dead-end and split off from collectors and/or mainlines. Road conditions include New, Reconstructed, and for the purposes of this study, Legacy. The same rules apply to New roads as Reconstructed, so if it is Reconstructed we are considering it New. The Legacy roads that are being sampled are those that were used for haul in the recent harvest event. There may be legacy roads in the Unit that were not used, or roads previously/recently decommissioned. Road type information for Units will be generally provided in map form from the Agency.

Roads may be decommissioned by excavating tank traps in the road surface or by placing slash in the road surface. These barriers are placed to prevent access onto the Harvest Unit. These roads still require a Roads Section survey effort as they must meet maintenance standards for not delivering sediment to WOS.

A primary concern with roads is their connection to WOS. Perhaps a road ditch leads directly to a stream without a settling basin or appropriate cross-drain. Or there could be sediment entering WOS through gullies on the road surface, over the road fill, from a cross-drain, etc. Establishing connectivity to WOS and the circumstances of the road condition associated with the connectivity allows the Agency to determine which rule (if any) appears to be non-compliant.

If gullies or other deposited sediment are visible and lead from the road surface, fills, or drainages, the Contractor shall physically follow the sediment or gully from the road downhill to where the gully or sediment disappears /deposits (disperses) away from WOS or delivers/lies within 10' of WOS. An important distinction about Road Segment data collection relative to Stream Crossings has to do with road ditches. If a road ditch has a gully in it and delivers sediment to WOS, it is important to ask how the ditch delivered the sediment. Did the ditch enter a ditch-out that was not at a stream crossing, but led to WOS anyway? In that case, the Road Section data would indicate that the ditch was gullied (**Gullies; D**) and that the road section connected to WOS (**WOS_Conn**). If the gullied ditchline ran straight to a stream crossing and deposited sediment within 10' of the stream, once again the Contractor records that the ditch was gullied and that it connected to WOS in the Road Segment data sheet (WOS_Conn; DI). But because a stream crossing was involved, the Contractor also records that the ditch delivered sediment within 10'

of a stream on the Stream Crossing data sheet. If a stream crossing is involved, the Contractor records the status of the road leading to the stream crossing (Road Section) separately from the condition of the stream crossing itself (Stream Crossing).

A concern related to connectivity is the potential for road building activities to result in conditions that could trigger a landslide that could deliver material to WOS. For this reason Roads data collection requires frequent measurements of hillslope angles away from immediate WOS, sidecast presence and road cut and fill conditions. We define the difference between sidecast and fill to avoid confusion when quantifying conditions of either. The two are made of similar or identical material. Sidecast is the excess material placed at the side of or over the edge of a road, potentially over the top of existing fill.

While collecting data on road sections, record data on road condition (width, presence of gullies), hill slope, presence of petroleum waste, cut and fill conditions, drainage condition, and delivery to WOS. Data that need to be recorded and reported for each road section's data are listed below and compiled with example entries in the table Road Segment Data:

DataType: This variable is recorded for all Roads data.

Variable Name	**DataType**
Value(s)	"Road"
Level	Unit

Notification: Provide the Agency notification number for all data collected within a specific harvest unit.

Variable Name	**Notification**
Value(s)	Text
Record for	Unit

Surveyors: Record the name or names of surveyors conducting the data collection on the unit in use.

Variable Name	**Surveyors**
Value(s)	Text
Record for	Unit

Date: Record the date of data collection. Record in the format of "MM/DD/YYYY".

Variable Name	**Date**
Value(s)	MM/DD/YYYY
Record for	Unit

SecGPS: A GPS point is recorded at the beginning of each road section. The point name is associated with the data collected for that WOS section.

Variable Name	**SecGPS**
Value(s)	Text
Record for	Roads Section

Record: The individual record number (starting at 1) begins here. If there are multiple entries to be made for a Roads Section, each entry has a subsequent Record number.

Variable Name	Record
Value(s)	Numeric
Record for	Roads Section

RSecType: Record the road section data type: road section start point ("S"), junction ("J"), and termination ("T"). Road section data are not recorded for termination points.

Variable Name	RSecType
Value(s)	"S", "J", "T"
Record for	Roads Section

RoadType: Record the type of road for data collection. Roads types include mainline, connector, or spur (M, C, S, respectively. See above for definitions). If the road is pre-existing prior to the unit harvest it will get one of those three labels. The three categories of road types are recorded as "NM", "NC", or "NS" if the road was new or reconstructed at the time of the harvest.

Variable Name	RoadType
Value(s)	"M", "C", "S", "NM", "NC", "NS"
Record for	Roads Section

RoadUse: Record the use and accessibility of the road section. If a road is generally used only for the purposes of forestry, record "F". This is the default value. If the road section has been identified by the Stewardship Forester as receiving non-forestry traffic, record the section as multiple uses "MU".

Variable Name	RoadUse
Value(s)	"MU", "F"
Record for	Roads Section

RoadHSlope: Road hill slope. At the beginning of each Roads Station record the downhill angle of the hill slope in percent. If there is no downhill slope (road is lower than the surrounding slopes) then record a zero. If the road is perpendicular to the contour of the hill, the slope of the road surface may provide this measurement as long as the difference between the slope of the road and slope of the hill is within the range noted in Table 12 on Page 52. (See Addendum on Page 56 for diagram).

Variable Name	RoadHSlope
Value(s)	Numeric
Record for	Roads Section
Units	ones, %

RoadWidth: Record at beginning of station. Road width is measured from one edge of the road surface to the other. The road surface includes the running surface and associated surfaces that could support travel. Measure width from the top of the toe of fill, edge of ditch, or the edge of soil disturbance. Take

the measurement 50' beyond the starting point if the point coincides with a turnout or curve widening. If the measurement location still coincides with a curve widening or turnout, move another 50' along the Roads Section.

Variable Name	**RoadWidth**
Value(s)	Integer
Record for	Roads Section
Units	ones, Feet

SteepSdcastFill: Where sidecast or fill are present and the hill slope at those locations is greater than 60% (40% for granitic soils), record their presence; "S" for sidecast, "F" for fill.

Variable Name	**SteepSdcastFill**
Value(s)	"F", "S"
Record for	Sidecast or Fill present on slope > 60% or 40% (granitic soils)

FillCond: Record the condition of fill for a road section if fill is present. "OK" indicates that the following conditions were not encountered. "SL" indicates slumps or depression along edge of road over fill that is greater than a square yard in area. "BD" indicates that drainage from a berm is directed onto fill. "WA" indicates that organic waste such as slash, stumps, or logs is incorporated in the road fill, usually at the fill base. "ER" indicates that the road fill is evidencing erosion in the form of rills or gullies. If multiple conditions are present, record them as separate Records under the same SecGPS identifier.

Variable Name	**FillCond**
Value(s)	"OK", "SL", BD", "WA", "ER"
Record for	Roads Section
Condition	Fill present

RoadCutCond: Record if road cut is present. If individual slumps in the road cut result in the movement of > 1 cubic yard of material, record "SL". If rills or gullies are evident in the cut, record "ER". If neither condition is present, record "OK". If both conditions are present, record "SLER".

Variable Name	**RoadCutCond**
Value(s)	"OK", "SL", "ER", "SLER"
Record for	Roads Section
Condition	Road cut present

Gullies: Record when gullies are present in the road surface, fill, hillslope, or ditch. Gullies in the hillslope, road surface, fill, and ditch are recorded respectively as "H", "R", "F", and "D". If gullies are present in multiple surfaces types record the types they occur in (e.g., "RF").

Variable Name	**Gullies**

Value(s)	"H", "R", "F", "D", or combinations
Record for	Roads Section
Condition	Record when gullies present

CulvertStatus: Record when stream or ditch culverts are present. If the culvert is a stream culvert on a new or reconstructed road, fill in this value and record appropriate information for New Stream Crossings. For stream culverts record "S-OK" if the culvert is <10% blocked, "S-PB" if partially blocked (10-70% blocked), and "S-CB" if completely blocked (>70%). The same blockage percentages apply to drain culverts ("D-OK", "D-PB", "D-CB"). If a second drain culvert is encountered in a road segment, a second record for the road section is entered.

Variable Name	**CulvertStatus**
Value(s)	"S-OK", "S-PB", "S-CB", "D-OK", "D-PB", "D-CB"
Record for	Roads Section
Condition	Record when culverts present

FlowDirFrom: If flow is directed onto a road, indicate if the source was a blocked stream culvert ("C"), blocked cross-drain ("X"), blocked ditch "D", or from a wet area (spring, seep, etc.; "W") that road construction uncovered or crossed.

Variable Name	**FlowDirFrom**
Value(s)	"C", "X", "D", "W"
Record for	Roads Section
Condition	Flow directed onto road

FlowDirTo: Record if road drainage is directed onto an unarmored fillslope ("U").

Variable Name	**FlowDirTo**
Value(s)	"U"
Record for	Roads Section

WOS_Conn: Record if road conditions result in connectivity to WOS. We interpret connectivity as occurring if sediment is visibly deposited with 10 feet of WOS and/or an erosive gully leads from the incident to WOS. Record whether the initiation point for delivery was a drain outflow ("DO"), blocked cross-drain or culvert ("BXD"), a ditch ("DI"), road runoff ("RR"), berm drainage ("BD"), erosion or gullying of a road cut or fill ("FC"), if there was connection between an oiled road surface and the WOS ("OR"), or if there is another connective path from the road ("OT"; source not listed here). The final code, "DIV", is recorded when Contractor encounters a stream that is diverted along the road ditch instead of passing under the road in a stream culvert. Road conditions related to these connectivity sources are recorded individually. If two or more occur within 50 feet of each other, Contractor may use the same GPS point but shall record separate data entries to capture conditions relating to each source.

Variable Name	**WOS_Conn**
Value(s)	"DO", "BXD", "DI", "RR", "BD", "FC", "OR", "OT", "DIV"
Record for	Roads Section
Condition	WOS connectivity detected

WOS_AmtDeliv: For WOS that received sediment from a road-related activity, record a visually-deduced amount of sediment delivery. Amounts are recorded as categories of magnitude: 0-1 cubic yards, 1-10 cubic yards (10 = 1 dump truck load), 10-100 cubic yards, and > 100 cubic yards.

Variable Name	**WOS_AmtDeliv**
Value(s)	"0-1", "1-10", "10-100", ">100"
Record for	Roads Section
Condition	Delivery of sediment to WOS

PhotoID: Record the identifier for photographs associated with a specific condition, primarily WOS connectivity for Roads Section data. See photograph requirements in section 1.A.

Variable Name	**PhotoID**
Value(s)	Text
Record for	Roads Section
Condition	WOS connectivity

4.1.D. Stream Crossings

Data collection procedure:

Stream crossings are defined here as road or skid trail crossings of streams or wetlands of any size. Stream crossings include temporary crossings as well as the placement of more permanent structures. For each stream crossing the Contractor will determine the fill depth of the crossing either directly or by recording the downstream fill length and angle as measured from the road surface. ODF will use these numbers to determine fill depth. ODF needs the fill angle information for assessing rules not associated with depth. The culvert dimensions will be used by the agency to determine whether the proper culvert size was used for the watershed area at hand. Temporary crossing decommissioning has specific requirements for both skid trails and roads. Data requirements include determining if the temporary crossing was removed and whether barriers were placed at specified distances from the stream.

Temporary crossings that were not removed may be difficult to identify in the field. For type F & D streams, the temporary crossings should be identified as such in the written plan. For N streams, if fill > 8' deep the written plan should identify the temporary crossing. There is no notification of temporary crossings across type N streams with fills < 8'. Therefore, if a temporary crossing were inadvertently left in place and the notification closed out (as is the case for units in this study), the crossings should be identified as permanent, and all measurements taken accordingly.

Data collection focuses on the crossing itself and the condition of the road/skid trail leading to the crossing. Data gathered on the skid trail/road approaches are divided into river right (RR) and river left (RL; see Definitions). Data are collected on delivery of sediment from the road/skid trail surface or ditches and the placement of drainage features to assist in determining drainage adequacy.

It is critical for the Contractor to be aware of issues arising that are related to Road Sections, WOS Sections, and Stream Crossings within close proximity to one another. For example, say a stream culvert is plugged, causing a diversion of flow onto a road. That information is recorded under the Road Station **CulvertStatus** (e.g., **CulvertStatus** = SCB and most likely **WOS_Conn** = BXD) entry. Contractor would also collect data for the stream crossing.

The columns for "Issues" may require multiple entries. If more than one issue is detected at a crossing, record multiple Record values for the crossing with each containing one of the issues. Retain the XingGPS value for the additional entries; all other values except for Issues do not need to be filled in. Repeat this procedure until all of the detected issues are recorded.

Data that need to be recorded and reported for each new, reconstructed, previously existing, or temporary crossing are listed below:

DataType: This variable is recorded for all Stream Crossing data.

Variable Name	DataType
Value(s)	"Stream Crossing"
Level	Unit

Notification: Provide the Agency notification number for all data collected within a specific harvest unit.

Variable Name	Notification
Value(s)	Text
Record for	Unit

Surveyors: Record the name or names of surveyors conducting the data collection on the unit in use.

Variable Name	Surveyors
Value(s)	Text
Record for	Unit

Date: Record the date of data collection. If data collection spans multiple days, record the specific date that data collection for a specific crossing occurred. Record in the format of "MM/DD/YYYY".

Variable Name	Date
Value(s)	MM/DD/YYYY
Record for	Unit

XingGPS: A GPS point is recorded at the stream crossing; if the crossing is a road crossing, use the GPS point name recorded for the road data startpoint beginning at the crossing. If the crossing is a skid trail crossing that was encountered while taking WOS data then use the same GPS point name as was used to define the next GPS start point for the WOS data. The same GPS point, identified here or for WOS, will be used again if the crossing is a road (not skid trail) crossing. We are not concerned about which data sheet the GPS identifier is named under. Instead, we are interested in these convergent data-collection points to simply share the same identifier.

Variable Name	XingGPS
Value(s)	Text
Record for	Stream Crossing

Record: The individual record number (starting at 1) begins here. If there are multiple entries to be made for a Stream Crossing, each entry has a subsequent Record number.

Variable Name	Record
Value(s)	Numeric
Record for	Stream Crossing

StreamType: Record the type of stream that the Stream Crossing crosses over. Streams include all combinations of stream size (Large, Medium, Small; L, M, S) with stream type (Non-fish, Domestic, Fish-bearing, Significant Wetland; N, D, F, SWL)

Variable Name	StreamType
Value(s)	"LN", "LD", "LF", "MN", "MD", "MF", "SN", "SD", "SF", "SWL"
Record for	Stream Crossing

CrossingType: Record the type of crossing. These include new ("N"), reconstructed ("R"), present pre-harvest ("P"), and skid trail ("S"). A new or reconstructed crossing is one that appears to have been altered at the time of the operation (i.e., less than 5 years ago).

Variable Name	**RoadType**
Value(s)	"N", "R", "P", "S",
Record for	Stream Crossing

FillLength: Record the downstream fill length from the edge of the road surface to the toe of the fill adjacent to the stream culvert. Measurements are made in feet, rounded to the nearest foot. **FillLength** and **FillAngle** will be used to calculate the fill depth. If fill depth is directly measurable (see FillDepth, below) then **FillLength** does not need to be recorded.

Variable Name	**FillLength**
Value(s)	Integer
Record for	Stream Crossing
Condition	Crossing fill present
Units	Feet
Allowable Error	3 feet

FillAngle: Record the downstream fill angle of the edge of the road surface at a point along the road perpendicularly adjacent to the culvert.

Variable Name	**FillAngle**
Value(s)	Integer
Record for	Stream Crossing
Condition	Crossing fill present
Units	%

FillDepth: In instances where the fill depth is shallow (<8 feet), the depth may be measured by pocket leveling rod. This measurement can be used in place of recording **FillLength**.

Variable Name	**FillDepth**
Value(s)	Integer
Record for	Stream Crossing
Condition	Crossing fill present
Units	Feet

CulvertWidth_In: Record the diameter of the stream crossing culvert inlet for a crossing. If the crossing is a bridge, enter 999. If the crossing is a box culvert, record the width. If the inlet of the culvert has been damaged or compromised (partially crushed, bent, torn, etc.) record the minimum diameter. If the culvert is a pipe arch culvert record the span here and the rise in PARise_In. All measurements are in inches, rounded to the nearest inch.

Variable Name	**CulvertWidth_In**
Value(s)	Integer
Record for	Stream Crossing

Condition	
Units	Inches

PARise_In: If a pipe arch culvert is present, record the pipe arch's rise at the inlet. If the culvert is partially buried by stream sediment record the maximum rise. All measurements are in inches, rounded to the nearest inch.

Variable Name	**PARise_In**
Value(s)	Integer
Record for	Stream Crossing
Condition	Pipe Arch Culvert
Units	Inches

CulvertWidth_Out: Record the diameter of the stream crossing culvert outlet for a crossing. If the crossing is a bridge, enter 999. If the crossing is a box culvert, record the width. If the outlet of the culvert has been damaged or compromised (partially crushed, bent, torn, etc.) record the minimum diameter. If the culvert is an arch culvert record the span here and the rise in PARise_Out. All measurements are in inches, rounded to the nearest inch.

Variable Name	**CulvertWidth_Out**
Value(s)	Integer
Record for	Stream Crossing
Condition	
Units	Inches

PARise_Out: If an arch culvert is present, record the arch culvert's height at the outlet. If the culvert is partially buried by stream sediment record the maximum height. All measurements are in inches, rounded to the nearest inch.

Variable Name	**PARise_Out**
Value(s)	Integer
Record for	Stream Crossing
Condition	Pipe Arch Culvert
Units	Inches

TempXing: For all temporary crossings associated with the harvest (non-legacy), record whether the structure associated with the temporary crossing has altered streamflow and led to erosion of bed or banks (Streamflow alteration, SFA), whether the crossing structure has experienced stream erosion (SE), whether the structure has not been removed (XNR), or whether there is ponding behind fill associated with the temporary crossing (Sidecast ponding, SCP), or if the temporary crossing is in OK condition (OK). Additionally, if the fill depth appears to have been > 8 feet deep based on the depth of the approaching road or skid trail, record "Fill".

Variable Name	**TempXing**
Value(s)	Blank, "SFA", "SE", "XNR", "SCP", "OK", "Fill"
Record for	Stream Crossing

Condition	All streams

Drainage_RR: Record the drainage feature type to the river right of crossings and temporary crossings. The drainage types include cross drains ("X"), cross ditches ("C"), water bars ("W"), other ("O"), and none ("N"). The "N" value would be assigned if no structure were present within 50 feet of a stream. A cross-ditch is an exaggerated version of a water bar. It has a ditch and berm that alone or together would prevent vehicle passage. A water bar looks similar but is drivable. In the case that there is more than one variety to the river right of a crossing, record the type closest to the river-right stream bank.

Variable Name	**Drainage_RR**
Value(s)	Blank, "W", "C", "O", "N", "X"
Record for	Stream Crossing

Drainage_RL: Record the drainage feature type to the river left of crossings and temporary crossings. The drainage types include cross drains ("X"), cross ditches ("C"), water bars ("W"), other ("O"), and none ("N"). The "N" value would be assigned if no structure were present within 50 feet of a stream. In the case that there is more than one variety to the river right of a crossing, record the type closest to the river-right stream bank.

Variable Name	**Drainage_RL**
Value(s)	Blank, "W", "C", "O", "N", "X"
Record for	Stream Crossing

RR1: Record the distance to the first drainage feature encountered along the river-right skid trail or road. For temporary crossings the distance is measured from the stream bankfull width midpoint in the temporary crossing. For roads the distance is measured from the midpoint of the road above the stream culvert. If the distance is > 50' or is not apparent, record 999.

Variable Name	**RR1**
Value(s)	Integer
Record for	Stream Crossing
Condition	
Units	Feet

RR2: Record the distance to the second drainage feature encountered along the river-right skid trail or road if the stream is a medium or large stream. If it is a small stream record nothing. For temporary crossings the distance is measured from the stream bankfull width midpoint in the temporary crossing. For roads the distance is measured from the midpoint of the road above the stream culvert. If the distance is > 125' or is not apparent, record 999.

Variable Name	**RR2**
Value(s)	Integer
Record for	Stream Crossing
Condition	M or L stream
Units	Feet

RL1: Record the distance to the first drainage feature encountered along the river-left skid trail or road. For temporary crossings the distance is measured from the stream bankfull width midpoint in the temporary crossing. For roads the distance is measured from the midpoint of the road above the stream culvert. If the distance is > 50' or is not apparent, record 999.

Variable Name	RL1
Value(s)	Integer
Record for	Stream Crossing
Condition	
Units	Feet

RL2: Record the distance to the second drainage feature encountered along the river-left skid trail or road if the stream is a medium or large stream. If it is a small stream record nothing. For temporary crossings the distance is measured from the stream bankfull width midpoint in the temporary crossing. For roads the distance is measured from the midpoint of the road above the stream culvert. If the distance is > 125' or is not apparent, record 999.

Variable Name	RL2
Value(s)	Integer
Record for	Stream Crossing
Condition	M or L stream
Units	Feet

BarDitch_RR: In the case that cross ditches or water bars are used as sediment barriers to the crossing, record the status of the water bars or cross ditches to the river right of the stream crossing. The ditches/bars have no issues ("OK"), lack excavation into the road surface (built on the road surface, not in; "ON"), have an outlet that is not lower than the road surface ("OUT"), is not angled to direct the flow off the road ("ANG"), or exhibit vehicle tracks over them that are compromising their effectiveness (permitting flow through the bar; "TR").

Variable Name	BarDitch_RR
Value(s)	Blank, "OK", "ON", "OUT", "ANG", "TR"
Record for	Stream Crossing
Condition	Water bars or cross ditches used as sediment barrier

BarDitch_RL: In the case that cross ditches or water bars are used as sediment barriers to the crossing, record the status of the water bars or cross ditches to the river left of the stream crossing. The ditches/bars have no issues ("OK"), lack excavation into the road surface (built on the road surface, not in; "ON"), have an outlet that is not lower than the road surface ("OUT"), is not angled to direct the flow off the road ("ANG"), or exhibit vehicle tracks over them that are compromising their effectiveness (permitting flow through the bar; "TR").

Variable Name	BarDitch_RL
Value(s)	Blank, "OK", "ON", "OUT", "ANG", "TR"

Record for	Stream Crossing
Condition	Water bars or cross ditches used as sediment barrier

RoadSlope_RR: Record the slope of the road from the crossing to a point 50' up the river-right portion of the road or skid trail surface.

Variable Name	**RoadSlope_RR**
Value(s)	Integer
Record for	Stream Crossing
Units	1%

RoadSlope_RL: Record the slope of the road from the crossing to a point 50' up the river-left portion of the road or skid trail surface.

Variable Name	**RoadSlope_RL**
Value(s)	Integer
Record for	Stream Crossing
Units	1%

Issues_RR: Record issues with sediment deposition arising from conditions with the river-right road/skid trail condition. If sediment is deposited within 10' of a stream as a result of connectivity with a ditchline, record "D". If sediment is deposited within 10' of a stream as a result of delivery from a road surface (e.g., gullies in the road), record "R". If deposition is from a skid trail crossing, record "S". If no delivery issues are found record "No".

Variable Name	**Issues_RR**
Value(s)	Blank, "No", "D", "R", "S"
Record for	Stream Crossing

Issues_RL: Record issues with sediment deposition arising from conditions with the river-left road/skid trail condition. If sediment is deposited within 10' of a stream as a result of connectivity with a ditchline, record "D". If sediment is deposited within 10' of a stream as a result of delivery from a road surface (e.g., gullies in the road), record "R". If deposition is from a skid trail crossing, record "S". If no delivery issues are found record "No".

Variable Name	**Issues_RL**
Value(s)	Blank, "No", "D", "R", "S"
Record for	Stream Crossing

Issues_Fill: Record if the crossing fill has gullies in it greater than 2" wide or deep ("G"), slumps of a volume > 1 cubic yard ("S"), cracks parallel to the road surface ("C"), or if it is unarmored ("U"). A crack in the fill would have dimensions 1 foot long or longer parallel to the road surface on or along road fill. The unarmored condition can be combined with the other issue types ("UG", "UC", "US"). This

information is not applicable for temporary crossings where crossing has been removed. This will apply to temporary crossings (that may be identified as such)that were not removed.

Variable Name	**Issues_Fill**
Value(s)	"No", "G", "C", "S", "U" , "UG", "UC", "US"
Record for	Stream Crossing
Condition	Crossing fill present

PhotoID: Record the identifier for photographs associated with a specific condition, primarily related to WOS connectivity Issues. See photograph requirements in section 1.A.

Variable Name	**PhotoID**
Value(s)	Text
Record for	Stream Crossing
Condition	WOS connectivity

NOTE: BRIDGES - Some Stream Crossings will be Bridges. Collect Data as described above.

Please supplement data in Notes section with additional entries as diagrammed in Addendum on Page 57.

A) **Bankfull Width at a point 100 feet upstream of Bridge:** _____

B) **Bankfull Width at a point 100 feet downstream of Bridge:** _____

C) **Bankfull Width below (at) the Bridge:** _____

D) **Freeboard, i.e. – distance from bottom of bridge to Ordinary High Water:** _____

4.1.E. Landings and Quarries

Data collection procedure:

Contractor shall collect data on the condition of all landings and quarries in the Unit. Quarries are either active (evidence of current use including machinery tracks and fresh rock piles) or inactive (lacking machinery tracks, settled rock piles, and possibly vegetated). See our definition of Landing. For each landing and quarry the Contractor will determine connectivity with WOS including location within RMAs, WOS, or unfiltered drainage leading to WOS.

One issue that may present itself more in landings than elsewhere is petroleum waste. Petroleum waste includes spilled oil, jugs containing oil residue or oil, oil filters, grease tubes, ether cans, and other similar waste. Spent containers of petroleum product are still considered petroleum waste if left within the Unit. Tannins from certain tree bark produce what appears to be a black slick on puddles and should not be confused with petroleum waste.

Multiple features may exist at a single quarry. If there is more than one Issue (see below) record separate entries for the same landing or quarry by Issue type. Record more than one entry for a landing or quarry if more than one variety of waste is encountered. Ensure that the same QL_GPS code is recorded for all entries pertaining to a single quarry or landing and use sequential Record numbers for each entry.

Data that need to be recorded and reported for each quarry and landing are listed below and compiled with example entries in the table Quarries & Landings:

DataType: This variable is recorded for all quarries and landings.

Variable Name	DataType
Value(s)	"Quarry_Landing"
Level	Unit

Notification: Provide the Agency notification number for all data collected within a specific harvest unit.

Variable Name	Notification
Value(s)	Text
Record for	Unit

Surveyors: Record the name or names of surveyors conducting the data collection on the unit in use.

Variable Name	Surveyors
Value(s)	Text
Record for	Unit

Date: Record the date of data collection. If data collection spans multiple days, record the date for which data collection occurred for that particular quarry or landing. Record in the format of "MM/DD/YYYY".

Variable Name	Date
Value(s)	MM/DD/YYYY
Record for	Unit

QL_GPS: A GPS point is recorded for each quarry and landing encountered. The GPS value from a nearby road section (SegGPS) may be used for a quarry or landing if within 100 feet.

Variable Name	**QL_GPS**
Value(s)	Text
Record for	Quarries & Landings

Record: The individual record number (starting at 1) begins here. If there are multiple entries to be made for Quarries & Landings, each entry has a subsequent Record number.

Variable Name	**Record**
Value(s)	Numeric
Record for	Quarries & Landings

QLType: Record the quarry or landing type. All landings are "L", inactive quarries are "QI", active quarries are "QA".

Variable Name	**Type**
Value(s)	"QI", "QA", "L"
Record for	Quarries & Landings

LandingHSlope: If greater than 50% slope, record the downhill native slope adjacent to the landing upon which drainage is directed or directly upon which waste (WasteType) is located. Waste is considered on the slope if it has been placed on the slope face, up to the edge of the landing, or overhanging the slope face. Hillslope measurement does not include the slope of fill.

Variable Name	**LandingHSlope**
Value(s)	Numeric
Record for	Quarries & Landings
Condition	Landing (Type="L"), waste (WasteType) on hillslope with >50% angle or landing drainage onto hillslope with > 50%.
Units	%

Issues: For quarries, record if the quarry lies within a channel ("QC"). For landings, record whether the landing lies within an RMA ("LR"), stumps/slash/logs are embedded in the landing fill ("LF"), or if the landing is located on an existing slump ("SLU") or slide ("SLI"). If the landing is or obviously was in the channel itself, determine if the channel flow direction was altered (e.g., by decking in the channel; "LCD") or if material was added to or removed from the channel to create the landing ("LCAR")

Variable Name	**Issues**
Value(s)	"LR", "QC", "LCAR", "LCD", "LF", "SLU", "SLI"
Record for	Quarries & Landings
Condition	Quarry: In channel Landing: multiple conditions

WasteLoc: Record the location of waste found in quarries and landings. See WasteType for a list of waste types of concern. Waste locations include waste from a quarry or landing that have ended up within the bankfull width of a WOS ("BFW"), in an erosion channel leading to a WOS ("CTW"), or within the quarry ("Q") or landing ("L") itself. Petroleum containers may be found to the side of a landing away from a burn pile but not on the driving surface of the landing; these items would be considered as within the landing area.

Variable Name	**WasteLoc**
Value(s)	"BFW", "CTW", "Q", "L"
Record for	Quarries & Landings

WasteType: Record the type of waste found at landings, active/inactive quarries, bankfull widths of streams leading through quarries or landings, or the erosion channels leading from the quarries/landings to WOS. Types include overburden ("OB"; top layer of material removed for road construction, may have been treated as sidecast or piled), solid waste ("SW"; rocks), and petroleum waste ("PW") including spilled oil, jugs containing oil or oil residue, oil filters, grease tubes, ether cans, and other similar waste. Other varieties include general waste from operations ("OW"), household (non-operational) waste ("HW"), and stumps from landing construction ("ST"). Types also include slash piles ("SP") and sidecast ("SI"). Solid waste (AKA: rocks) would be correctly recorded as waste for a quarry entry if it was evident that quarry rocks were entering a WOS, e.g., quarry rock placed in a stream that passed through the quarry.

Variable Name	**WasteType**
Value(s)	"OB", "SW", "PW", "OW", "HW", "ST", "SI", "SP"
Record for	Quarries & Landings

QuarryLandslide: Record the location of any landslide originating above and into the quarry ("A"), below and from the quarry ("B"), or both ("AB").

Variable Name	**QuarryLandslide**
Value(s)	"A", "B", "AB"
Record for	Quarries & Landings
Condition	Active & inactive quarries

Connectivity: Record whether a quarry and landing drains to WOS without filtering ("W"), if landing drainage is focused onto hillslopes ("H"), or if runoff disperses ("D").

Variable Name	**Connectivity**
Value(s)	"W", "H", "D"
Record for	Quarries & Landings
Condition	All quarries and landings (W & D) Landings (H)

PhotoID: Take digital photographs of connectivity issues on quarries and landings as well as of any incidents of petroleum waste. See photograph requirements in section 1.A.

Variable Name	**PhotoID**
Value(s)	Text
Record for	Quarries & Landings
Condition	Connectivity, Petroleum waste

Table 3 – SAMPLE DATA SHEET – WOS Section Data

Comment [j3]: Revised April 5 2013

Oregon Dept of Forestry 2012						**Waters of State Data**								
Forest Practices Compliance Audit						**Notification #**								
						Surveyors								
Bold = always record		*Italics = record if present*				**Date**				**Page**		**of**		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Side: RR RL		*All Streams Except SN*			*SN Channel*		*Veg*							
SegGPS/ record	**Seg Type**	**WOS Type**	*Stumps w/in 20'*	*Skid Dist w/in 35'*	*Cable Corridor*	*Gradient <10'*	*length*	*Retent 10' (y/n)*	*Slash Cover (%)*	*WOS Disturb*	*Skid Issues*	*Skid Sed. Volume*	*Xing/Road Dist*	*WP Details*	*Photo #*
		(Stumps20				Differs								Some
		Other)				from FG								inconsistencies

WOS Type		**Cable Corridor**		**RoadDist**		**WOS Disturb**				**Written Plan**	
LMS	**L/M/S**	Cable yard-soil	**CYS**	<10'	<10'	Slash pile channel **SPI**		Stumps	**ST**	Harvest w/in 100'	**WP100**
F/N/D	**F/N/D**	Present-no damage	**P**	>10' but < 50'	>10'	Slash w/in 10'	**SP10**	Metallic			
Wetland < 1/4 ac	**W<1/4**	Damage Repaired	**DR**	>50'	>50'	Slash pond	**SPO**	waste	**MW**	Road within RMA	**WP_Road**
Wetland > 1/4 ac	**W1/4**	**SkidIssues**				Slash erosion	**SE**	Road rock	**RR**	Machinery in lake	**WP_ML**
F lake < 1/2 ac	**SFL**	Straight up & connecte	**SUC**			Track/Rut	**TR**	Channelized/		Yarding Corridors in RMA	**WP_Yard**
N lake>1/2 ac	**NL**	Steep Skid Connectivity	**SSC**			Sidecast	**SI**	relocated	**CR**		
Wetland > 8 ac	**SWL**	Other connectivity		**Seg Type**				Add/remove			
All lakes	**AL**	issues	**SOTH**	Start pt	S			soil/rock	**AR**		
St. assoc. wet.	**SAW**			Junction	J						
				Terminal Point	T						

2012-2013 FPA Compliance Audit – FIELD GUIDE Page 37

Table 4 – SAMPLE DATA SHEET – Road Stations

	Oregon Dept of Forestry 2012		Roads Datasheet				Page		of			
	Forest Practices Compliance Audit		**Notification #**									
	Bold = always record		**Surveyors**									
	Italics = record if present		**Date**			Waste: Station & type						
	Underline: record if fill present					<Types: oil, other petroleum, household, other>						

1	2		3	4	5	6	7	8	9	10	11	12	13	14
GPS ID	**Rsec Type**	**RoadType**	**Road Hslope**	**Road Width**	*SteepSdcast Fill*	***Fill cond***	***Road cut condition***	*gullies*	*CulvertStatus*	***Flow DirFrom***	***Flow DirTo***	**WOS Conn**	**WOS Amt**	**Photo #**
/record		(combines												
		w/ RoadUse)												

Road Type

Spur	**S (NS)**	
New	**N**	
Collector	**C (NC)**	
Mainline	**M (NM)**	
Multiple Use	**MU**	

SteepSdcastFill

On slopes > 60/40

Sidecast	S
Fill	F

Take photo of:

Fill Cond(ition)

Present/OK	**OK**
Slumps	**SL**
Berm drainage	**BD**
/logs	
slash/stumps	**WA**
Erosion	**ER**

Road Cut Condition

OK	**OK**
Slumps	**SL**
Erosion	**ER**

RSecType

Start	**S**
Junction	**J**
Termination	**T**

WOS connectivity

Gullies

None	**N**
Hill slope	**H**
Road	**R**
Fill	**F**
Ditch	**D**

Drainage Tally

None	**N**
Grade Reversal	**G**
Sloping	**S**
Ditch	**D**
Culvert	**C**
Waterbar	**W**
Rolling dip	**R**

Culvert/cross drain damage or impedence

CulvertStatus

<type>	
Stream culvert	**S**
Ditch culvert	**D**
<Issue>	
OK	**OK**
Complete Block	**CB**
Partially blocked	**PB**

Gullies

FlowDirFrom

<onto road from>	
blocked culvert	**C**
blocked x-drain	**X**
blocked ditch	**D**
wet area	**W**

FlowDirTo

unarmored	**U**
fillslope	
~~headwall~~	**H**
~~slide~~	~~SLI~~
~~steep&erodible~~	~~S~~

Fill conditions

WOS Conn

Drain outflow	**DO**
Blocked cross-drain	**BXD**
Ditch	**DI**
Road runoff	**RR**
Berm drainage	**BD**
Fill/cut	**FC**
Oiled road runoff	**OR**
Other	**OT**
Diverted Stream	**DIV**

road flow

WOS Amt

0-1
1-10
10-100
>100

Table 5 – SAMPLE DATA SHEET –Stream Crossings

Oregon Dept of Forestry 2012
Forest Practices Compliance Audit

Notification # _____
Surveyors _____
Date _____

Stream Crossings
Data Sheet

Bold = always record
Italics = record if present

Xing GPS	Stream Type	Crossing Type	Fill length	Fill angle	Fill depth	Culvert width (in.) inlet	Culvert width (in.) outlet	Temp Xing	Drainage Feature type RR	Drainage Feature type RL	Distance to Drainage Feature RR1	Distance to Drainage Feature RR2	Distance to Drainage Feature RL1	Distance to Drainage Feature RL2	Bar/XDitch Status RR	Bar/XDitch Status RL	Road Slope RR	Road Slope RL	Issues RR	Issues RL	Issues Fill	Photo ID
& Record						PARise_in	PARise_Out															

Stream Type		CrossingType		TempXing		Drainage Feature		Bar/Ditch Status		Issues	
Large	L	New	N	X-ing not removed	XNR	Water bar	W	OK	OK	Sed deposition w/in 10' of stream from ditch	D
Medium	M	Reconstructed	R	Temp Xing fill >8'	Fill	Cross ditch	C	On road surface, not in	ON	Sed deposition w/in 10' of stream from from road	R
Small	S	Pre-harvest	P	Streamflow Alteration	SFA	other	O	Outlet not lower	OUT	Sed deposition w/in 10' of stream from skid trail	S
Fish	F	Skid trail	S	Sidecast Pond	SCP	none	N	Angled incorrectly	ANG	Gullies present in crossing fill	G
Non-fish	N			Structure Erosion	SE	cross drain	X	Compromised by tracks	TR	Fill slumping	S
Domestic	D			Temp Xing OK	OK					Fill cracking	C
Sig Wetland	W									Unarmored fillslope	UA

Table 6 – SAMPLE DATA SHEET – Quarries & Landings

Oregon Dept of Forestry 2012	Notification #	Landings & Quarries
Forest Practices Compliance Audit	Surveyors	
	Date	

Bold = always record
Italics = record if present

QL_GPS /record	QL Type	Landing Hslope	Issues	Waste Loc	Waste Type	Quarry Landslide	Connectivity	Photo

Type		**Issues**		**Waste: Type**		**Quarry Landslide**
Quarry-active	QA	Landing in RMA	LR	Overburden	OB	Location A,B
Quarry-inactive	QI	Quarry in channel	QC	Solid waste	SW	(above, below)
Landing	L	Landing in channel,		Trash-petroleum	PW	
		material added/removed	LCAR	Trash-operations	OW	
WasteLoc		channel diverted	LCD	Trash-household	HW	**Connectivity**
In BFW	BFW	Landing fill	LF	Stumps	ST	WOS W
channel to WOS	CTW	= slash, stumps, logs		Sidecast	SI	Hillslope H
In quarry	Q			Slash pile	SP	Disperses D
On landing	L					

SECTION 5. DATA SUBMISSION

Sample data collection sheets are provided in Tables 3-6 for illustration purposes only

Contractors may wish to contrive any suitable method for capturing data in the field; the contractor's strategy should be reflected in the Project Work Plan.

For submittal to ODF, data will be submitted to ODF electronically as specified in the Communications Plan portion of the Project Work Plan.

The data specifications as listed in the following tables 7-10 provide, for each data type, an example entry (Example), the variety of entry (categorical, text), values that are entered (integer, specific list of categories, text), the general data type the entry corresponds with (e.g., Unit, Stream Crossing), conditions that trigger recording a specific data entry, and data recording units (feet, percent).

The tables below list the codes for entry of various types of data. The Contractors Communication Plan should include the use of the codes listed for each of the various data types.

Table 7

Waters of State   Data Specifications

		DataType	Notification	Surveyors	Date	Side	SegGPS	Record	SegType	WOSType	Stumps20	Stumps20_other	Skid35
	Example	"WOS"	2010332003411	"Jason James"	"03/21/2013 "	"RL"	"3SN12"	1	"J"	"SN"	4	2	34
Data Entry Values and Conditions	Entry	Categorical	Numeric	Text	Text	Categorical	Text	Numeric	Categorical	Categorical	Numeric	Numeric	Numeric
	Value(s)	"WOS"	Integer	Text	MM/DD/YYYY	"RR", "RL"	Text	Integer	"S", "J", "T"	"LF", "MF", "SF", "LN", "MN", "SN", "LD", "MD", "SD", "W<1/4", "W1/4", "SFL", "NL", "SWL", "AL"	Numeric (tally)	Numeric (tally)	Distance
	Record for	Unit	Unit	Unit	Unit	WOS Section	WOS Section	WOS Section	WOS Section	WOS Section	WOS Section	WOS Section	WOS Section
	Condition					Type F/D and L/M N streams					All streams but SN	All streams but SN, in cable corridors or felled tree remains	F, D streams. Record for all skid trails within 35' of bankfull width
	Units												Feet

Table 7 (Continued)

Waters of State   Data Specifications

		Cable Corridor	SN_Grad	Veg10		SlashCover	WosDisturb	SkidIssues	SkidSedVol	RoadDist	WrittenPlan	WOS_Photo
	Example	"DR"	"<10%"	"Y"		25	"TR"	"SUC"	"0-1"	">50 "	"WP100"	"Pic213"
Data Entry Values and Conditions	Entry	Categorical	Categorical	Categorical		Numeric	Categorical	Categorical	Categorical	Categorical	Categorical	Text
	Value(s)	"CYS", "P", "DR"	"< 10%", "> 10%"	"Y", "N"		0 to 100	"SPI", "SP10", "SPO", "SE", "TR", "SI", , "ST", "MW", "RR", "CR", "AR"	"SUC", "SSC", "SOTH"	"0-1", "1-10", "10-100", ">100"	"<10' ", ">10' ", ">50' "	"WP100", "WP_roads", "WP_ML", WP_Yard	Text
	Record for	WOS Section	WOS Section	WOS Section		WOS Section	WOS Section	WOS Section	WOS Section	WOS Section	WOS Section	WOS Section
	Condition	Record if cable corridor through RMA is present. All streams except SN.	SN	Perennial SN in regions specified in FPA Table 5 (Page 51); regions in Figure 1 (Page 48). Does not apply to cable corridors or crossings.		SN channel < 10% gradient	Streams: CR, AR, SPO, SE, SP10 All: MW, SI, ST, SPI, RR, TR	Skid trail connected to WOS	Any WOS	All WOS	WP100: F/D; WP_roads: F, D, L/M N, SWL; WP_ML: AL	WOS connectivity, vehicle tracks
	Units					5% increments				Feet		

Table 8

Roads Section   Data Specifications

		DataType	Notification	Surveyors	Date	SecGPS	Record	RSecType	RoadType	RoadUse	RoadH Slope	RoadWidth
	Example	"ROAD"	2010332003 411	"Jason James"	"03/21/2013"	"R1C"	1	"T"	"NC"	"MU"	18%	13
Data Entry Values and Conditions	Entry	Categorical	Numeric	Text	Text or date/time	Text	Numeric	Categorical	Categorical	Categorical	Numeric	Numeric
	Value(s)	"ROAD"	Integer	Text	MM/DD/YYYY	Text	Integer	"S", "J", "T"	"M", "C", "S", "NM", "NC", "NS"	"F", "MU"	Integer	Integer
	Record for	Unit	Unit	Unit	Unit	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section
	Condition											
	Units										%	Feet
	Allowable Error										10%	+/- 2 feet

Comment [jth4]: Not currently used in compliance decision queries.

Comment [j5]: I believe it is... should check with John

Table 8 *(Continued)*

Roads Section Data Specifications

		SteepSdcastFill	FillCond	RoadCutCond	Gullies	Culvert Status	FlowDirFrom	FlowDirTo	WOS_Conn	WOS_AmtDeliv	PhotoID
	Example		"Y"	"CR"	"ER"	"R"	"D-OK"		"U"	"BXD"	"0-1"	"Pic112"
Data Entry Values and Conditions	Entry		Categorical	Categorical	Categorical	Categorical	Categorical	Categorical	Categorical	Categorical	Categorical	Text
	Value(s)		"Y", "N"	"OK", "SL", " BD", "WA", "ER"	"OK", "SL", "ER"	"H", "R", "F", "D"	"S-OK", "S-PB", "S-CB", "D-OK", "D-PB", "D-CB"	C, "X", "D", "W"	", U"	DO, "BXD", "DI", "RR", "BD", "FC", "OR", OT, DIV	"0-1", "1-10", "10-100", ">100"	Text
	Record for		Roads Section	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section	Roads Section
	Condition			Fill Present	Road cut present	Record when gullies present	Record when culverts present	Flow directed onto road	Flow directed off road to unarmored fillslope	WOS connectivity detected	Delivery of sediment to WOS	WOS connectivity
	Units											
	Allowable Error											

Table 9

Stream Crossing   Data Specifications

		DataType	Notification	Surveyors	Date	XingGPS	Record	Stream Type	Crossing Type	FillLength	FillAngle	FillDepth	Culvert Width_In	PARise_In	Culvert Width_Out	PARise_Out	TempXing
	Example	" Stream Crossing"	2010332003411	"Jason Frank"	"03/21/2013"	"R1C"	1	"SF"	"S"	8	60%	8	32	18	28	18	"XNR"
Data Entry Values and Conditions	Entry	Categorical	Numeric	Text	Text or Date/Time	Text	Numeric	Categorical	Categorical	Numeric	Numeric	Numeric	Numeric	Numeric	Numeric	Numeric	Categorical
	Value(s)	" Stream Crossing"	Integer	Text	MM/DD/YYYY	Text	Integer	LN, "LD", "LF", "MN", "MD", "MF", "SN", "SD", "SF", "SWL"	"N", "R", "P", "S"	Integer	Integer	Integer	Integer	Integer	Integer	Integer	"SFA", "SCP", "XNR", "OK", "SE", "Fill"
	Record for	Unit	Unit	Unit	Unit	Stream Crossings	WOS Section	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings
	Condition									Crossing fill present	Crossing fill present	Crossing fill present		Record for pipe arch culverts		Record for pipe arch culverts	
	Units									Feet	%	Feet	Inches		Inches		

Table 9 (Continued)

Stream Crossing   Data Specifications

		Drainage_ RR	Drainage_ RL	RR1	RR2	RL1	RL2	BarDitch_ RR	BarDitch_ RL	RoadSlope_ RR	Road Slope_RL	Issues_RR	Issues_RL	Issues_Fill
	Example	"W"	"W"	18	52	15	44	"OUT"	"TR"	12%	8%	"No"	"D"	"G"
Data Entry Values and Conditions	Entry	Categorical	Categorical	Numeric	Numeric	Numeric	Numeric	Categorical	Categorical	Numeric	Numeric	Categorical	Categorical	Categorical
	Value(s)	Blank, "W", "C", "O", "N", "X"	Blank, "W", "C", "O", "N", "X"	Integer	Integer	Integer	Integer	Blank "OK", "ON", "OUT", "ANG", "TR"	Blank "OK", "ON", "OUT", "ANG", "TR"	Integer	Integer	Blank, "D", "R", "S"	Blank, "D", "R", "S"	Blank, "G", "C", "S", "U", "UG", "US", "UC"
	Record for	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings	Stream Crossings
	Condition				M or L streams		M or L streams	Water bars or cross ditches used as sediment barrier	Water bars or cross ditches used as sediment barrier					
	Units			Feet	Feet	Feet	Feet			%	%			

Table 10 – Data Specifications

	DataType	Notification	Surveyors	Date	QL_GPS	Record	QLType	Landing HSlope
Example	"Quarry_Landing"	2010332003411	"Jason James"	"03/21/2013"	"Q12"	1	"QA"	18%
Entry	Categorical	Numeric	Text	Text	Text	Numeric	Categorical	Numeric
Value(s)	"Quarry_Landing"	Integer	Text	MM/DD/YYYY	Text	Integer	"QA", "QI", "L"	Integer
Record for	Unit	Unit	Unit	Unit	Quarries & Landings	WOS Section	Quarries & Landings	Quarries & Landings
Condition								Landing (Type="L"), waste (WasteType) on hillslope with >50% angle or landing drainage onto hillslope with > 50%.
Units								%

-		Issues	WasteLoc	WasteType	QuarryLandslide	Connectivity	PhotoID
-	Example	"LCAR"	"BFW"	"SW"	"A"	"H"	"Pic112"
Data Entry Values and Conditions	Entry	Categorical	Categorical	Categorical	Categorical	Categorical	Text
	Value(s)	"LR", "QC", "LCAR", "LCD", "LF"	"BFW", "CTW", "Q", "L"	"OB", "SW", "PW", "OW", "HW", "SI", "SP", "ST"	"A", "B", "AB"	"W", "H", "D"	Text
	Record for	Quarries & Landings	Quarries & Landings	Quarries & Landings	Quarries & Landings	Quarries & Landings	Quarries & Landings
	Condition	Quarry: "QC" Landings: all other issue codes			Active & inactive quarries	All quarries and landings (W & D); Landings (H)	Connectivity, petroleum waste
	Units	%					

SECTION 6. UNIT DATA QUALITY REVIEW

Unit Data Packages should be submitted with an identifying element, as in a cover sheet or label. The Data Package identity should include the date submitted, a tracking code (alphanumeric) and a list of the units contained in the package. The method of identifying individual Unit Data Packages should be used consistently for the duration of the contract.

When the Contractor submits a Unit Data Package, the Contract Administrator will accept one of the ten units from the Package for review. The **Unit Data Quality Review Interval** ("review interval") will begin.

The Contract Administrator will visit the selected site and replicate the work of the Contractor, and compare the results to the Data Standards listed in Tables 10-13.

If the Unit Data Quality Review determines that the data meets the standards, ODF will notify the Contractor of the acceptance of the Unit Data Package. Contractor may then include the units in the Data Package in a Unit Payment Package.

Data submitted by Contractor that does not meet the Data Standards will be reported to Contractor within five (5) business days of the inspection.

If the data submitted by the Contractor does not meet the Data Standards, the Unit Data Package will be returned to the Contractor.

Contractor will revisit sites within the Unit Data Package as necessary to make corrections as needed to meet Unit Data Standards, and re-submit data sets to for additional review at no cost to the Agency.

Upon receipt of re-submitted Unit Data Package, the Contract Administrator will select a second site for evaluation, visit the site and replicate the work of the Contractor.

If the second Unit Data Quality Review determines that the Unit Data meets the Data Standards, ODF will notify the Contractor of the acceptance of the Unit Data Package. Contractor may then include the units in the Data Package in a Unit Payment Package.

If the data in the re-submitted Data Package does not meet the Data Standards, the Unit Data Package will be returned to the Contractor and ODF will schedule a meeting with the Contractor to assess future of the project.

Agency shall pay Contractor only for those Units for which data submitted meets criteria for precision and accuracy described in the Unit Data Quality Review process.

Figure 3 – Agency Inspection and Certification of Contractor Work
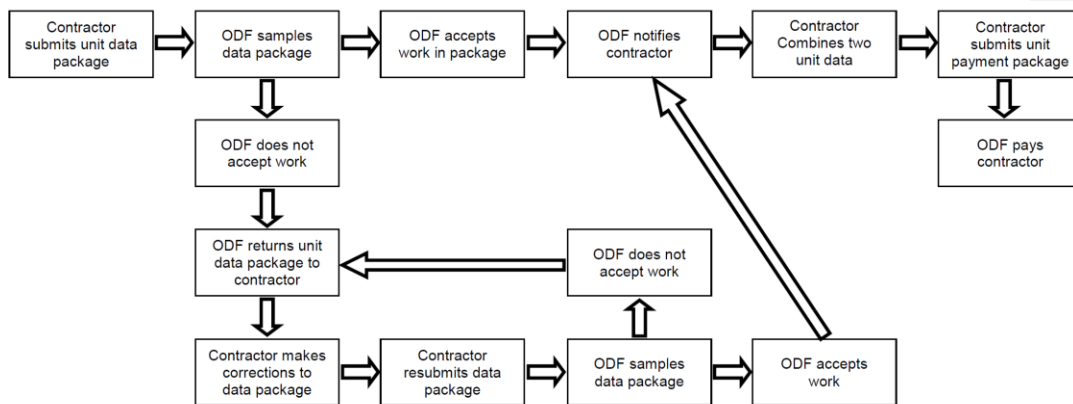
Table 11

Oregon Forest Practices Audit **STREAM CHANNELS DATA STANDARDS**			
Data Types - Stream Channels		**Data Criteria**	**Required Accuracy / Precision**
A	Streams	Water Classification: Stream type, etc.	90 % per unit correctly identified
B	Streams	Stumps w/in 20' Type F/D. Ccable corridor calls	95% of stumps meeting criteria are identified per unit. One cable corridor omitted per unit allowed.
B	Streams	Stream channel segment: Length & Gradient	All slopes measured @ <10% within 5%; all segment length calls within 20'.
D	Streams	Presence / Absence of Vegetation Retention within 10 feet of Type F / D stream	Presence / Absence 90% within unit correct. Distance measures +/- 2 feet per unit.
E	Streams	Presence / Absence of skidding within 35' of stream.	Presence / Absence 90% within unit correct. Distance measures +/- 5 feet per unit.
F	Streams	Slash pile within 10 ft of Type F/D presence / absence.	Presence / Absence 90% within unit correct. Distance measures +/- 3 feet per unit.
G	Streams	Slash in streams: presence / absence.	Presence / Absence 80% within unit correct.
H	Streams	Stream channel disturbance: presence / absence / Type	95% correct within each unit.
I	Streams	Skidding through channel: presence / absence.	Essential Data - No pemissable error.
J	Streams	Stream Crossings: Distance to drainage structure.	95 % correct to +/- 5 feet distance per unit

Table 12

	ODF Forest Practices Audit ROADS DATA STANDARDS	
	Roads Data Topic	**Required Accuracy / Precision**
A	Road Presence / Absence	95 % of observations per unit must be true.
B	Road segment GPS point types are incorrectly identified or missing	<10% of sections per unit with missing/misidentified points
C	RoadType -- Size	< 20% of sections incorrectly recorded
D	RoadType – New, Reconstructed or pre existing.	Two sections may be misidentified
E	RoadUse – Multiple Use or Forestry Only	<5 stations misrecorded
F	Road Hill Slope incorrect † (see notes below)	< 5% of measurements per unit incorrect
G	Road width measurement is > 2 feet in error	<10% of measurements incorrect
H	FillAngle or FlowHSlope Angle ‡	< 5 % of measurements in error per unit
I	Sidecast: presence / absence	Steep :(granitic>35%, non-granitic>55%) < 5% error on unit. Not Steep: (Granitic < 35%, non-granitic <55%) ,10% error on unit
J	Fill Condition is misclassified	<5% misclassified or missed FillCond item
K	RoadCutCondition or Gullies	<5% misclassified or undetected sections
L	FillCond, RoadCutCond, Gullies, Flow Directed From – connected to Waters of State	Essential data - no passable threshold
M	Culvert – stream crossing: Presence / absence	Essential data - no passable threshold- no missed or misidentified stream culverts
N	Ditch / culvert are misidentified	<5% of missed road culverts permitted
O	Culvert Status: Culvert status is incorrectly recorded	<5% incorrectly classified culverts
P	Road Runoff Flow Directed From is missed or misidentified within a segment	<10% FlowDirFrom misclassification
Q	Road Runoff Flow Directed To is missed or misidentified	Essential data – no passable threshold
R	Waters of State Connectivity misidentified	No passable threshold
S	Waters of State amount of sediment deposition – an estimate	Cubic Yards : (0-1, 1-10, 10-100, > 100) : off by one category
T	Section length	Except for shorter sections due to detected issues or road termination, 30' error permissible for < 20% of sections
U	PhotoID: photo not taken when delivery/petroleum issue detected	One missed photo allowed per unit

†Non-granitic soils: if slope less than 40%, may record anything less than 40%.

Between 40 and 50%, error may be +/-10%.

Granitic soils: if slope less than 20%, may record anything less than 20%.

Between 20 and 30% error may be +/- 10%.

Between 30 and 50% error may be +/- 5%.

Greater than 50% error may be +/- 10%.

Between 50 and 70%, error may be +/- 5%. Greater than 70% error may be +/- 10%.
‡ If fill slopes less than 70%, may record anything less than 70%. At 70% and greater the error may be +/- 10%.

Table 13

ODF Forest Practices Audit **STREAM CROSSINGS DATA STANDARDS**		
	Data Types – Stream Crossings	**Data Quality Criteria**	**Required Accuracy / Precision**
A	Stream Crossing	Presence / Absence Proper Identification	95% of observations per unit must be true.
B	Stream Crossings	Riparian segments with missing/ wrong Stream type	<10% of segments may be in error
C	Stream Crossings	fill length	No Fill Length calls off by more than 3' (if total fill length <= 30'), or off by more than 8' (total fill length >30')
D	Stream Crossings	Fill Angle	No Fill Angle calls off by more than 10%
E	Stream Crossings	Fill Depth	< 10% Fill Depth calls off by more than 2 feet
F	Stream Crossings	Temp crossings Drainage Feature Type	No more than 3 entry omitted or falsely entered per Unit
G	Stream Crossings	Stream crossing Issues	< 5% omitted or falsely entered per Unit
H	Stream Crossings	stream crossings culvert diameter	All calls within 2"
I	Stream Crossings	Temp crossings with incorrect Dist to Drainage Feature calls	All calls within 5 feet of ODF-measured values
J	Stream Crossings	Bar/Xditch Status misclassified.	80 % of all observations must be true.
K	Stream Crossings	Road slope measurement	All calls within 5% of ODF-measured slope
L	Stream Crossings	PhotoID: photo not taken when delivery/petroleum issue detected	One missed photo allowed per unit

Table 14

	Data Types	Data Quality Criteria	Required Accuracy / Precision
ODF Forest Practices Audit **LANDINGS AND QUARRIES DATA STANDARDS**
A	Landings/Quarries	Landing :Presence / Absence	90% of landings must be identified (not missed) and correctly identified (true landings)
B	Landings/Quarries	Landings/quarries slope of hillside.	90 % of measurements within 90%
C	Landings/Quarries	Classifications of Landings/Quarries	90 % correct
D	Landings/Quarries	Issues at Landings/quarries; Presence / absence.	95 % correct
E	Landings/Quarries	Waste at landings & quarries : location	90% correct
F	Landings/Quarries	Waste at Landings/quarries Classification of type.	90% correct
G	Landings/Quarries	Landslide associated with Landings / Quarries:	95% correct
H	Landings/Quarries	Drainage at Landings/Quarries – Connectivity to Waters of State	95% correct.
J	Landings/Quarries	Landings/quarries in RMA with WP details misclassified/missing	Up to 15% not noted
K	Landings/ Quarries	Photographs : Included as required.	90 % correct

SECTION 7. UNIT PAYMENT PACKAGE SUBMITTAL

Unit Payment Packages should be submitted with an identifying element, as in a cover sheet or label. The Payment Package identity should include the date submitted, a tracking code (alphanumeric) and a list of the units contained in the package. The method of identifying individual Unit Data Packages should be used consistently for the duration of the contract.

An invoice should accompany the Unit Payment Package.

Upon receipt of a Unit Payment Package, the Agency Administrator will forward the invoice, with approval for payment, to the ODF Finance Section.

Payment to Contractor will then be made according to Administrative Rule requirements.

Table 15

	OREGON DEPARTMENT OF FORESTRY - PRIVATE FORESTS PROGRAM												
	2012 - 2013 Forest Practices Compliance Audit												
	Unit Tracking Sheet												
Notification Number ( )	Unit Office ( )	Stewardship Forester ( )	Contact Phone ( )	E-mail ( )	Landowner Permission ( )	Work Plan Visit Week ( )	ODF Contacted ( )	Date of Visit ( )	Data Submitted ( )	Data Checked ( )	Unit Billed ( )	Unit Paid ( )

Addendum: Field Guide - Road Hill Slope Measurements

Page 22 refers to the measurement of Road HSlope.

The Road Hill Slope is the slope of the hill on which the road has been constructed.

On occasion material placed below the road during construction will create the appearance of a hillslope greater than that which was there before the road was built.

The RoadHSlope measure should be of the native slope, as illustrated here:

Measure Native Slope as depicted by red line

Sidecast

Original Slope
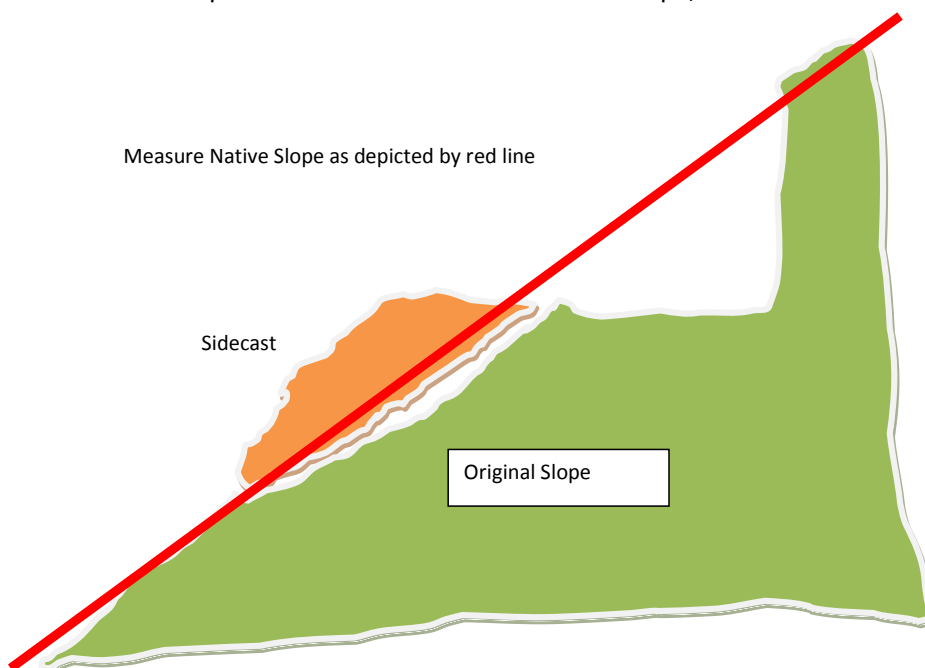
Addendum: Field Guide - Bridges – A subset of Stream Crossings

In some instances stream crossings on Skid Trails and/or Roads will be bridges rather than culverts. Additional information is requested for Bridges.

This sheet is provided to capture some pertinent information on bridges.
Record Data for a Stream Crossing (approach, drainage, etc.) and then Supplement with this info here.
Record Data on this sheet or in NOTES at an appropriate GPS point(the LAT/LONG of bridge will do).
Please note the following at each bridge site, to the nearest foot:

E)   Bankfull Width at a point 100 feet upstream of Bridge: _____

F)   Bankfull Width at a point 100 feet downstream of Bridge: _____

G)   Bankfull Width below (at) the Bridge: _____

H)   Freeboard, i.e. – distance from bottom of bridge to
      Ordinary High Water: _____

Plan View – Bridge Stream Crossing

Profile View – Bridge Stream Crossing
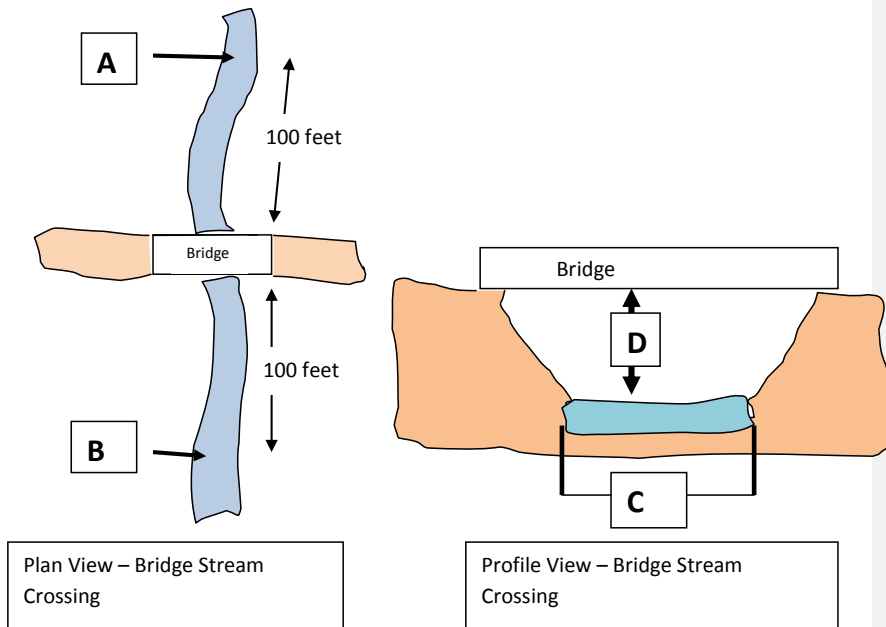
Section 8. List of Agency Offices, Contact Information, Maps

OREGON DEPARTMENT OF FORESTRY OFFICES

Eastern Oregon Area

OFFICE	PHONE	FAX
Eastern Oregon Area PO Box 670 3501 E Third Street Prineville, OR 97754	(541) 447-5658	(541) 447-1469
Central Oregon District PO Box 670 3501 E Third Street Prineville, OR 97754	(541) 447-5658	(541) 447-1469
The Dalles Unit 3701 W 13th The Dalles, OR 97058	(541) 296-4626	(541) 298-4993
Prineville Unit PO Box 670 3501 E Third Street Prineville, OR 97754	(541) 447-5658	(541) 447-1469
Sisters Sub-Unit 16721 Pine Tree Lane Sisters, OR 97759	(541) 549-2731	(541) 549-9422
John Day Unit 415 Patterson Bridge Road P.O. Box 546 John Day, OR 97845	(541) 575-1139	(541) 575-2253
Fossil Sub-Unit 45945 Hwy 10 Fossil, OR 97830	(541) 763-2575	(541) 763-2027
Klamath/Lake District Office 3200 DeLap Road Klamath Falls, OR 97601	(541) 883-5681	(541) 883-5555
Klamath Unit 3200 DeLap Road Klamath Falls, OR 97601	(541) 883-5681	(541) 883-5555
Lakeview Unit 2290 North 4th Street Lakeview, OR 97630	(541) 947-3311	(541) 947-3078

Northeast Oregon District Office   (541) 963-3168   (541) 962-1058
611 20th Street
La Grande, OR 97850

OFFICE	PHONE	FAX
La Grande Unit	(541) 963-3168	

611 20th Street
La Grande, OR 97850
(541) 962-1058

Baker City Sub-Unit		
2995 Hughes Lane	(541) 523-5831	(541) 523-5874

Baker City, OR 97814

Pendleton Unit	(541) 276-3491	(541) 276-0710

1055 Airport Road
Pendleton, OR 97801

Wallowa Unit	(541) 886-2881	(541) 886-9085

802 W. Hwy. 82
Wallowa, OR 97885

Northwest Oregon Area

OFFICE	PHONE	FAX
Northwest Oregon Area	(503) 359-7426	(503) 359-9514

801 Gales Creek Road
Forest Grove, OR 97116-1

Astoria District	(503) 325-5451	(503) 325-2756

92219 HWY 202
Astoria, OR 97103

North Cascade District	(503) 859-2151	(503) 859-2158

22965 North Fork Road SE
Lyons, OR 97358

Molalla Unit	(503) 829-2216	(503) 829-4736

14995 S Hwy 211
Molalla, OR 97038-8441

Santiam Unit	(503) 859-2151	(503) 859-2158

22965 North Fork Road SE
Lyons, OR 97358

Forest Grove District	(503) 357-2191	(503) 357-4548

801 Gales Creek Road
Forest Grove, OR 97116

Columbia City Unit
405 E Street
Columbia City, OR 97018   (503) 397-2636   (503) 397-6361

OFFICE	PHONE	FAX
Tillamook District	(503) 842-2545	(503) 842-3143

5005 3rd Street
Tillamook, OR 97141-2999

West Oregon District - Philomath   (541) 929-3266   (541) 929-5549
24533 Alsea HWY
Philomath, OR 97370

Dallas Unit   (503) 623-8146   (503) 623-9034
825 Oak Villa Road
Dallas, OR 97338

Toledo Unit   (541) 336-2273   (541) 336-5261
763 NW Forestry Road
Toledo, OR 97391

Southern Oregon Area

OFFICE	PHONE	FAX
Southern Oregon Area	(541) 440-3412	(541) 440-3419

1758 NE Airport Road
Roseburg, OR 97470-1499

Coos District   (541) 267-4136   (541) 269-2027
63612 Fifth Rd
Coos Bay, OR 97420

Gold Beach Unit   (541) 247-6241   none
PO Bos 603
Gold Beach, OR 97444

Roseburg Unit   (541) 440-3412   (541) 440-3424
1758 NE Airport Road
Roseburg, OR 97470-1499

South Cascade District   (541) 726-3588   (541) 726-2501
3150 Main Street
Springfield, OR 97478

Eastern Lane Unit   (541) 726-3588   (541) 726-2501
3150 Main Street
Springfield, OR 97478

Sweet Home Unit   (541) 367-6108   (541) 367-5613
4690 HWY 20
Sweet Home, OR 97386

OFFICE	PHONE	FAX
Southwest Oregon District 5286 Table Rock Road Central Point, OR 97502	(541) 664-3328	(541) 664-4340
Grants Pass Unit 5375 Monument Drive Grants Pass, OR 97526	(541) 474-3152	(541) 474-3158
Medford Unit 5286 Table Rock Road Central Point, OR 97502	(541) 664-3328	(541) 664-4340
Western Lane District 87950 Territorial HWY Veneta, OR 97487-0157	(541) 935-2283	(541) 935-0731
Florence Unit 2660 Kingwood Street Florence, OR 97439	(541) 997-8713	(541) 997-3737

Table 16 – Contact Information – Stewardship Foresters

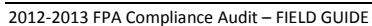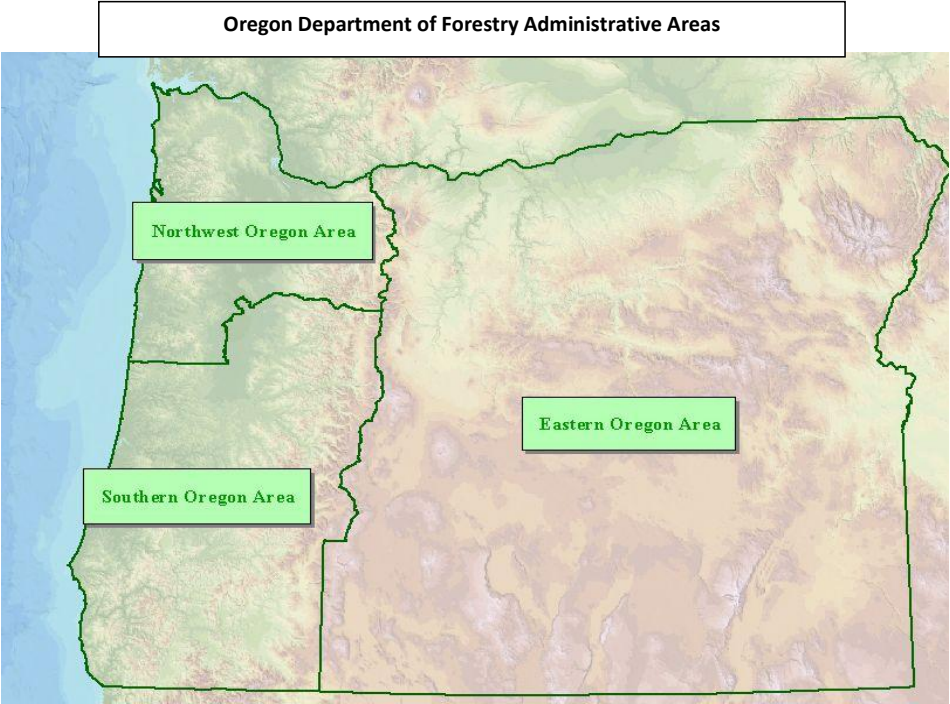| AREA	DISTRICT/ ASSOC	Unit	Name	Office Phone	E-Mail
EOA	Central OR	Prineville	OTTO Stu A	541-447-5658x232	SOTTO@ODF.STATE.OR.US
EOA	Central OR	Prineville	WARD Elden	541-447-5658x235	EWARD@ODF.STATE.OR.US
EOA	Central OR	Prineville	ZIMMERLEE, Boone	541-447-5658x	BZIMMERLEE@ODF.STATE.OR.US
EOA	Central OR	The Dalles	BEHLING Chet	541-296-4626	CBEHLING@ODF.STATE.OR.US
EOA	Central OR	John Day	AUSLAND Kirk	541-575-1139x230	KAUSLAND@ODF.STATE.OR.US
EOA	Central OR	John Day	MUND Mitchell M	503-575-1139x231	MMUND@ODF.STATE.OR.US
EOA	Klamath/Lake	Klamath	MALONEY Anne	541-883-5681	AMALONEY@ODF.STATE.OR.US
EOA	Klamath/Lake	Klamath	CANTRELL, Sarah	541-883-5681	SBCANTRELL@ODF.STATE.OR.US
EOA	Klamath/Lake	Lake	CARLSEN Kellie L	541-947-3311	KACARLSEN@ODF.STATE.OR.US
EOA	Klamath/Lake	Klamath	BRUSH Jason A	541-883-5681	JBRUSH@ODF.STATE.OR.US
EOA	Northeast OR	Pendleton	RUDOLF Hans	541-276-3491	HRUDOLF@ODF.STATE.OR.US
EOA	Northeast OR	La Grande	WAGNER, Rick	541-963-3168	RWAGNER@ODF.STATE.OR.US
EOA	Northeast OR	Wallowa	MEYER Steve	541-886-2881	SMEYER@ODF.STATE.OR.US
EOA	Northeast OR	Baker City Sub-Unit	McCRAE Logan	541-523-5831	LMCCRAE@ODF.STATE.OR.US
NWOA	Forest Grove	Forest Grove	ONION Brent	503-359-7442	BONION@ODF.STATE.OR.US
NWOA	Forest Grove	Forest Grove	AGALZOFF Nathan V	503-359-7461	NAGALZOFF@ODF.STATE.OR.US
NWOA	Astoria	Astoria	LERTORA Ashley M	503-325-5451	ALERTORA@ODF.STATE.OR.US
NWOA	Astoria/ Tillamook	Astoria	MCCOY Jason		JMCCOY@ODF.STATE.OR.US
NWOA	Forest Grove	Columbia City	KRAUSE John E	503-397-2636	JKRAUSE@ODF.STATE.OR.US
NWOA	Forest Grove	Columbia City	REED Mark R	503-397-2636	MREED@ODF.STATE.OR.US
NWOA	Forest Grove	Forest Grove	NELSON Kevin	503-359-7493	KNELSON1@ODF.STATE.OR.US
NWOA	North Cascade	Santiam	BROG Alan H	503-859-4343	ABROG@ODF.STATE.OR.US
NWOA	North Cascade	Molalla	WHITTINGTON, Thomas	503-829-2216	TWHITTINGTON@ODF.STATE.OR.US
NWOA	North Cascade	Molalla	HAASKEN Mike A	503-829-2216	MHAASKEN@ODF.STATE.OR.US
NWOA	North Cascade	Molalla	HEPLER Jeff D	503-829-2216	JHEPLER@ODF.STATE.OR.US
NWOA	North Cascade	Santiam	BALDWIN Keith D	503-859-4324	KBALDWIN@ODF.STATE.OR.US
NWOA	Tillamook	Tillamook	MAIN Mark R	503-815-7052	MMAIN@ODF.STATE.OR.US
NWOA	West Oregon	Philomath	MAHR Bill S	541-929-9160	BMAHR@ODF.STATE.OR.US
NWOA	West Oregon	Dallas	THOMPSON Dave K	503-623-8146	DKTHOMPSON@ODF.STATE.OR.US
NWOA	West Oregon	Toledo	SIEVERS, Scott	541-336-2273	SSIEVERS@ODF.STATE.OR.US
NWOA	West Oregon	Toledo	HITSELBERGER, Joe	541-336-2273	JHITSELBERGER@ODF.STATE.OR.US
NWOA	West Oregon	Dallas	RHEA Jennifer	503-623-8146	JREHA@ODF.STATE.OR.US
SOA	Western Lane	Florence	HALL James L	541-997-8713	JHALL@ODF.STATE.OR.US
SOA	Western Lane	Veneta	MENK, Dan	541-935-2283	DMENK@ODF.STATE.OR.US
SOA	Western Lane	Veneta	JOHNSON Robert A	541-935-2283	RAJOHNSON@ODF.STATE.OR.US
SOA	Western Lane	Veneta	BIESECKER Robin	541-935-2283	RBIESECKER@ODF.STATE.OR.US
SOA	Coos	Coos Bay	HOGAN Mike A	541-267-1749	MHOGAN@ODF.STATE.OR.US
SOA	Coos	Coos Bay	KOREIVA Tuch J	541-267-1748	TKOREIVA@ODF.STATE.OR.US
SOA	Coos	Coos Bay	MORRIS Nick	541-267-1747	NMORRIS@ODF.STATE.OR.US
SOA	Coos	Gold Beach	SAVONA, Stacy	541-469-5040	SSAVONA@ODF.STATE.OR.US
SOA	Coos	Coos Bay	DEVINE Delos G	541-267-1750	DDEVINE@ODF.STATE.OR.US
SOA	SOA Office	Roseburg Unit	DEWEY Mike	541-440-3412	MDEWEY@ODF.STATE.OR.US
SOA	SOA Office	Roseburg Unit	PETERSON, Brian	541-440-3412	BPETERSON@ODF.STATE.OR.US
SOA	SOA Office	Roseburg Unit	TANNEHILL Jack J	541-440-3412	JTENNEHILL@ODF.STATE.OR.US
SOA	SOA Office	Roseburg Unit	WALDRON Keith	541-440-3412	KWALDRON@ODF.STATE.OR.US
SOA	South Cascade	Eastern Lane/ Springfield	VETTER Marvin J	541-726-3588	MVETTER@ODF.STATE.OR.US
SOA	South Cascade	Sweet Home	EWING James	541-367-6108	JEWING@ODF.STATE.OR.US
SOA	South Cascade	Eastern Lane/ Springfield	MEEHAN Tim R	541-726-3588	TMEEHAN@ODF.STATE.OR.US
SOA	South Cascade	Sweet Home	KENDALL Steve	541-367-6108	SKENDALL@ODF.STATE.OR.US
SOA	Southwest OR	Medford	MARCU Bob L	541-664-3328	BMARCU@ODF.STATE.OR.US
SOA	Southwest OR	Medford	WINSLOW Lee C	541-664-3328	LWINSLOW@ODF.STATE.OR.US
SOA	Southwest OR	Grants Pass	SCHULTZ Tyson	541-471-4244	TSCHULTZ@ODF.STATE.OR.US
SOA	Southwest OR	Grants Pass	WETMORE Stephen K	541-471-4253	SWETMORE@ODF.STATE.OR.US

Figure 4

Oregon Department of Forestry Protection Districts

Legend:
- Northwest Oregon Area
- Eastern Oregon Area
- Southern Oregon Area
- Non ODF Area
- ★ State Headquarters
- Unit Office
- District Office
- Other ODF Office Sites

ODF GIS Unit/rz
5/23/05
Personnel Directory

Figure 5

Oregon Department of Forestry Administrative Areas

Northwest Oregon Area

Southern Oregon Area

Eastern Oregon Area

Appendix A: Forest Practices Act Definitions -

DEPARTMENT OF FORESTRY

DIVISION 600

DEFINITIONS

OAR 629-600-0100

Definitions

As used in OAR chapter 629, divisions 605 through 669 and divisions 680 through 699, unless otherwise required by context:

(1) "Abandoned resource site" means a resource site that the State Forester determines is not active.

(2) "Active resource site" means a resource site that the State Forester determines has been used in the recent past by a listed species. 'Recent past' shall be identified for each species in administrative rule. Resource sites that are lost or rendered not viable by natural causes are not considered active.

(3) "Active roads" are roads currently being used or maintained for the purpose of removing commercial forest products.

(4) "Aquatic area" means the wetted area of streams, lakes and wetlands up to the high water level. Oxbows and side channels are included if they are part of the flow channel or contain fresh water ponds.

(5) "Artificial reforestation" means restocking a site by planting trees or through the manual or mechanical distribution of seeds.

(6) "Basal area" means the area of the cross-section of a tree stem derived from DBH.

(7) "Basal area credit" means the credit given towards meeting the live tree requirements within riparian management areas for placing material such as logs, rocks or rootwads in a stream, or conducting other enhancement activities such as side channel creation or grazing exclosures.

(8) "Bog" means a wetland that is characterized by the formation of peat soils and that supports specialized plant communities. A bog is a hydrologically closed system without flowing water. It is usually saturated, relatively acidic, and dominated by ground mosses, especially sphagnum. A bog may be forested or non-forested and is distinguished from a swamp and a marsh by the dominance of mosses and the presence of extensive peat deposits.

(9) "Channel" is a distinct bed or banks scoured by water which serves to confine water and that periodically or continually contains flowing water.

(10) "Chemicals" means and includes all classes of pesticides, such as herbicides, insecticides, rodenticides, fungicides, plant defoliants, plant desiccants, and plant regulators, as defined in ORS 634.006(8); fertilizers, as defined in ORS 633.311; petroleum products used as carriers; and chemical application adjuvants, such as surfactants, drift control additives, anti-foam agents, wetting agents, and spreading agents.

(11) "Commercial" means of or pertaining to the exchange or buying and selling of commodities or services. This includes any activity undertaken with the intent of generating income or profit; any activity in which a landowner, operator or timber owner receives payment from a purchaser of forest products; any activity in which an operator or timber owner receives payment or barter from a landowner for services that require notification under OAR 629-605-0140; or any activity in which the landowner, operator, or timber owner barters or exchanges forest products for goods or services. This does not include firewood cutting or timber milling for personal use.

(12) "Completion of the operation" means harvest activities have been completed to the extent that the operation area will not be further disturbed by those activities.

(13) "Conflict" means resource site abandonment or reduced resource site productivity that the State Forester determines is a result of forest practices.

(14) "Debris torrent-prone streams" are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement.

(15) "Department" means the Oregon Department of Forestry.

(16) "Diameter breast height" (DBH) means the diameter of a tree inclusive of the bark measured four and one-half feet above the ground on the uphill side of the tree.

(17) "Domestic water use" means the use of water for human consumption and other household human use.

(18) "Dying or recently dead tree" means a tree with less than ten percent live crown or a standing tree which is dead, but has a sound root system and has not lost its small limbs. Needles or leaves may still be attached to the tree.

(19) "Estuary" means a body of water semi-enclosed by land and connected with the open ocean within which saltwater is usually diluted by freshwater derived from the land. "Estuary" includes all estuarine waters, tidelands, tidal marshes, and submerged lands extending upstream to the head of tidewater. However, the Columbia River Estuary extends to the western edge of Puget Island.

(20) "Exposure categories" are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur.

(21) "Filling" means the deposit by artificial means of any materials, organic or inorganic.

(22) "Fish use" means inhabited at any time of the year by anadromous or game fish species or fish that are listed as threatened or endangered species under the federal or state endangered species acts.

(23) "Fledging tree" means a tree or trees close to the nest which the State Forester determines are regularly used by young birds to develop flying skills.

(24) "Foraging area" means an area (usually a body of water) where bald eagles concentrate their hunting activities.

(25) "Foraging perch" means a tree or other structure that overlooks a portion of a foraging area and is habitually used by bald eagles as a vantage point while hunting.

(26) "Forestland" means land which is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied.

(27) "Free to grow" means the State Forester's determination that a tree or a stand of well distributed trees, of acceptable species and good form, has a high probability of remaining or becoming vigorous, healthy, and dominant over undesired competing vegetation. For the purpose of this definition, trees are considered well distributed if 80 percent or more of the portion of the operation area subject to the reforestation requirements of the rules contains at least the minimum per acre tree stocking required by the rules for the site and not more than ten percent contains less than one-half of the minimum per acre tree stocking required by the rules for the site.

(28) "Further review area" means an area of land that may be subject to rapidly moving landslides as mapped by the State Department of Geology and Mineral Industries or as otherwise determined by the State Forester.

(29) "Geographic region" means large areas where similar combinations of climate, geomorphology, and potential natural vegetation occur, established for the purposes of implementing the water protection rules.

(30) "High landslide hazard location" means a specific site that is subject to initiation of a shallow, rapidly moving landslide.

(31) "High water level" means the stage reached during the average annual high flow. The "high water level" often corresponds with the edge of streamside terraces, a change in vegetation, or a change in soil or litter characteristics.

(32) "Hydrologic function" means soil, stream, wetland and riparian area properties related to the storage, timing, distribution, and circulation of water.

(33) "Important springs" are springs in arid parts of eastern Oregon that have established wetland vegetation, flow year round in most years, are used by a concentration of diverse animal species, and by reason of sparse occurrence have a major influence on the distribution and abundance of upland species.

(34) "Inactive roads" are roads used for forest management purposes exclusive of removing commercial forest products.

(35) "Key components" means the attributes which are essential to maintain the use and productivity of a resource site over time. The key components vary by species and resource site. Examples include fledging trees or perching trees.

(36) "Lake" means a body of year-round standing open water.

(a) For the purposes of the forest practice rules, lakes include:

(A) The water itself, including any vegetation, aquatic life, or habitats therein; and

(B) Beds, banks or wetlands below the high water level which may contain water, whether or not water is actually present.

(b) "Lakes" do not include water developments as defined in section (82) of this rule.

(37) "Landslide mitigation" means actions taken to reduce potential landslide velocity or re-direct shallow, rapidly moving landslides near structures and roads so risk to persons is reduced.

(38) "Large lake" means a lake greater than eight acres in size.

(39) "Large wood key piece" means a portion of a bole of a tree, with or without the rootwad attached, that is wholly or partially within the stream, that meets the length and diameter standards appropriate to stream size and high water

volumes established in A Guide to Placing Large Wood in Streams, Oregon Department of Forestry and Oregon Department of Fish and Wildlife, May 1995.

(40) "Live tree" means a tree that has 10 percent or greater live crown.

(41) "Local population" means the number of birds that live within a geographical area that is identified by the State Forester. For example: the area may be defined by physical boundaries, such as a drainage or subbasin.

(42) "Main channel" means a channel that has flowing water when average flows occur.

(43) "Natural barrier to fish use" is a natural feature such as a waterfall, increase in stream gradient, channel constriction, or other natural channel blockage that prevents upstream fish passage.

(44) "Natural reforestation" means restocking a site with self-grown trees resulting from self-seeding or vegetative means.

(45) "Nest tree" means the tree, snag, or other structure that contains a bird nest.

(46) "Nesting territory" means an area identified by the State Forester that contains, or historically contained, one or more nests of a mated pair of birds.

(47) "Operation" means any commercial activity relating to the establishment, management or harvest of forest tree species except as provided by the following:

(a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.

(b) The establishment, management or harvest of hardwood timber, including but not limited to hybrid cottonwood that is:

(A) Grown on land that has been prepared by intensive cultivation methods and that is cleared of competing vegetation for at least three years after tree planting;

(B) Of a species marketable as fiber for inclusion in the furnish for manufacturing paper products;

(C) Harvested on a rotation cycle that is 12 or fewer years after planting; and

(D) Subject to intensive agricultural practices such as fertilization, cultivation, irrigation, insect control and disease control.

(c) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.

(d) The establishment, management or harvest of ornamental, street or park trees within an urbanized area, as that term is defined in ORS 221.010.

(e) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.

(f) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.

(g) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

(48) "Operator" means any person, including a landowner or timber owner, who conducts an operation.

(49) "Other wetland" means a wetland that is not a significant wetland or stream-associated wetland.

(50) "Perch tree" means a tree identified by the State Forester which is used by a bird for resting, marking its territory, or as an approach to its nest.

(51) "Plan for an Alternate Practice" means a document prepared by the landowner, operator or timber owner, submitted to the State Forester for written approval describing practices different than those prescribed in statute or administrative rule.

(52) "Relief culvert" means a structure to relieve surface runoff from roadside ditches to prevent excessive buildup in volume and velocity.

(53) "Removal" means the taking or movement of any amount of rock, gravel, sand, silt, or other inorganic substances.

(54) "Replacement tree" means a tree or snag within the nesting territory of a bird that is identified by the State Forester as being suitable to replace the nest tree or perch tree when these trees become unusable.

(55) "Resource site" is defined for the purposes of protection and for the purposes of requesting a hearing.

(a) For the purposes of protection:

(A) For threatened and endangered bird species, "resource site" is the nest tree, roost trees, or foraging perch and all identified key components.

(B) For sensitive bird nesting, roosting and watering sites, "resource site" is the nest tree, roost tree or mineral watering place, and all identified key components.

(C) For significant wetlands "resource site" is the wetland and the riparian management area as identified by the State Forester.

(b) For the purposes of requesting a hearing under ORS 527.670(4) and 527.700(3), "resource site" is defined in OAR 629-680-0020.

(56) "Riparian area" means the ground along a water of the state where the vegetation and microclimate are influenced by year-round or seasonal water, associated high water tables, and soils which exhibit some wetness characteristics.

(57) "Riparian management area" means an area along each side of specified waters of the state within which vegetation retention and special management practices are required for the protection of water quality, hydrologic functions, and fish and wildlife habitat.

(58) "Roosting site" means a site where birds communally rest at night and which is unique for that purpose.

(59) "Roost tree" is a tree within a roosting site that is used for night time roosting.

(60) "Saplings and poles" means live trees of acceptable species, of good form and vigor, with a DBH of one to 10 inches.

(61) "Seedlings" means live trees of acceptable species of good form and vigor less than one inch in DBH.

(62) "Shallow, rapidly moving landslide" means any detached mass of soil, rock, or debris that begins as a relatively small landslide on steep slopes and grows to a sufficient size to cause damage as it moves down a slope or a stream channel at a velocity difficult for people to outrun or escape.

(63) "Side channel" means a channel other than a main channel of a stream that only has flowing water when high water level occurs.

(64) "Significant wetlands" means those wetland types listed in OAR 629-680-0310, that require site specific protection.

(65) "Snag" means a tree which is dead but still standing, and that has lost its leaves or needles and its small limbs.

(66) "Sound snag" means a snag that retains some intact bark or limb stubs.

(67) "Staging tree" is a tree within the vicinity of a roosting site that is used for perching by bald eagles before entering the roost.

(68) "Stream" means a channel, such as a river or creek, that carries flowing surface water during some portion of the year.

(a) For the purposes of the forest practice rules, streams include:

(A) The water itself, including any vegetation, aquatic life, or habitats therein;

(B) Beds and banks below the high water level which may contain water, whether or not water is actually present;

(C) The area between the high water level of connected side channels;

(D) Beaver ponds, oxbows, and side channels if they are connected by surface flow to the stream during a portion of the year; and

(E) Stream-associated wetlands.

(b) "Streams" do not include:

(A) Ephemeral overland flow (such flow does not have a channel); or

(B) Road drainage systems or water developments as defined in section (82) of this rule.

(69) "Stream-associated wetland" means a wetland that is not classified as significant and that is next to a stream.

(70) "Structural exception" means the State Forester determines that no actions are required to protect the resource site. The entire resource site may be eliminated.

(71) "Structural protection" means the State Forester determines that actions are required to protect the resource site. Examples include retaining the nest tree or perch tree.

(72) "Temporal exception" means the State Forester determines that no actions are required to prevent disturbance to birds during the critical period of use.

(73) "Temporal protection" means the State Forester determines that actions are required to prevent disturbance to birds during the critical period of use.

(74) "Tree leaning over the channel" means a tree within a riparian management area if a portion of its bole crosses the vertical projection of the high water level of a stream.

(75) "Tyee Core Area" means a location with geologic conditions including thick sandstone beds with few fractures. These sandstones weather rapidly and concentrate water in shallow soils creating a higher shallow, rapidly moving landslide hazard. The Tyee Core area is located within coastal watersheds from the Siuslaw watershed south to and including the Coquille watershed, and that portion of the Umpqua watershed north of Highway 42 and west of Interstate 5. Within these boundaries, locations where bedrock is highly fractured or not of sedimentary origin as determined in the field by a geotechnical specialist are not subject to the Tyee Core area slope steepness thresholds.

(76) "Type D stream" means a stream that has domestic water use, but no fish use.

(77) "Type F stream" means a stream with fish use, or both fish use and domestic water use.

(78) "Type N stream" means a stream with neither fish use nor domestic water use.

(79) "Unit" means an operation area submitted on a notification of operation that is identified on a map and that has a single continuous boundary. Unit is used to determine compliance with ORS 527.676 (down log, snag and green live tree retention), ORS 527.740 and 527.750 (harvest type 3 size limitation), and other forest practice rules.

(80) "Vacated roads" are roads that have been made impassable and are no longer to be used for forest management purposes or commercial forest harvesting activities.

(81) "Water bar" means a diversion ditch and/or hump in a trail or road for the purpose of carrying surface water runoff into the vegetation and duff so that it does not gain the volume and velocity which causes soil movement or erosion.

(82) "Water development" means water bodies developed for human purposes that are not part of a stream such as waste treatment lagoons, reservoirs for industrial use, drainage ditches, irrigation ditches, farm ponds, stock ponds, settling ponds, gravel ponds, cooling ponds, log ponds, pump chances, or heli-ponds that are maintained for the intended use by human activity.

(83) "Waters of the state" include lakes, bays, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, wetlands, inlets, canals, the Pacific Ocean within the territorial limits of the State of Oregon, and all other bodies of surface or underground waters, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters which do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction.

(84) "Wetland" means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include marshes, swamps, bogs, and similar areas. Wetlands do not include water developments as defined in section (82) of this rule.

(85) "Written plan" means a document prepared by an operator, timber owner or landowner that describes how the operation is planned to be conducted.

Stat. Auth.: ORS 527.710(1)
Stats. Implemented: ORS 527.630(5), 527.674 & 527.714
Hist.: FB 31, f. 6-14-72, ef. 7-1-72; FB 39, f. 7-3-74, ef. 7-25-74; FB 1-1978, f. & ef. 1-6-78; FB 5-1978, f. & ef. 6-7-78; FB 3-1983, f. & ef. 9-13-83; FB 1-1985, f. & ef. 3-12-85; FB 2-1985(Temp), f. & ef. 4-24-85; FB 2-1987, f. 5-4-87, ef. 8-1-87; FB 4-1988, f. 7-27-88, cert. ef. 9-1-88; FB 4-1990, f. & cert. ef. 7-25-90; FB 1-1991, f. & cert. ef. 5-23-91; FB 7-1991, f. & cert. ef. 10-30-91; FB 3-1994, f. 6-15-94, cert. ef. 9-1-94; FB 5-1994, f. 12-23-94, cert. ef. 1-1-95; FB 9-1996, f. 12-2-96, cert. ef. 1-1-97, Renumbered from 629-024-0101; DOF 6-2002, f. & cert. ef. 7-1-02; DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03; DOF 6-2005(Temp), f. & cert. ef. 8-2-05 thru 1-27-06; DOF 8-2005, f. 12-13-05, cert. ef. 1-1-06; DOF 7-2006(Temp), f. & cert. ef. 6-27-06 thru 12-23-06; DOF 1-2007, f. & cert. ef. 1-8-07